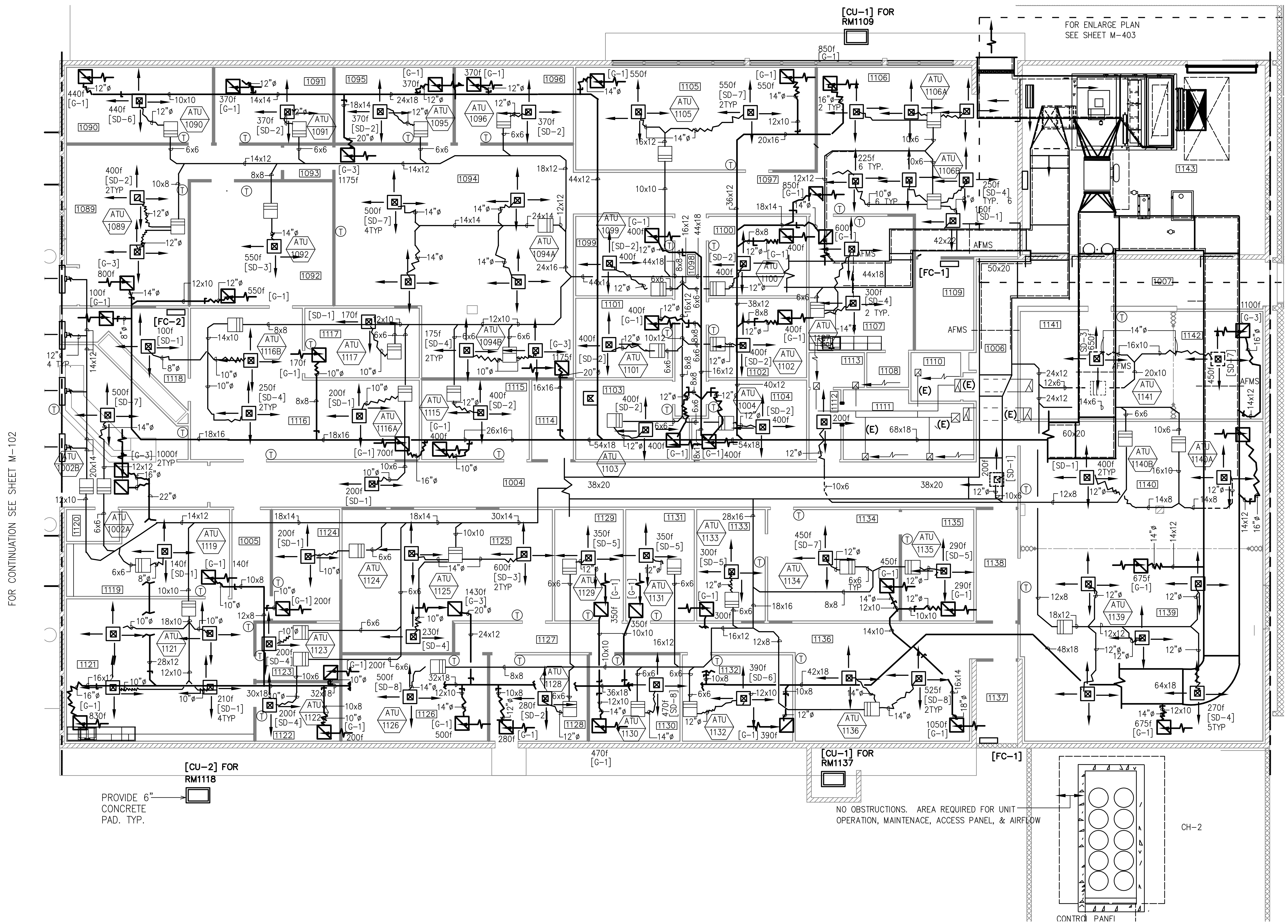
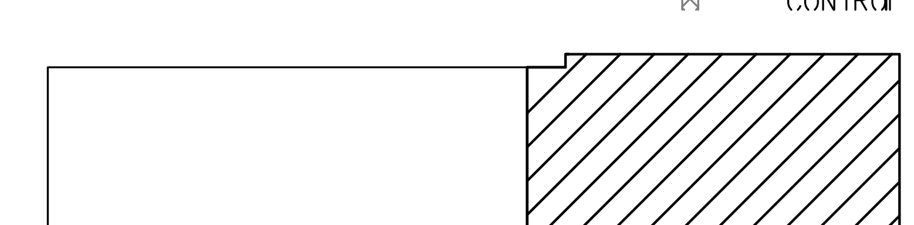


MECHANICAL FLOOR PLAN – BUILDING 282 – AREA C

SCALE: 1/8" = 1'-0



KEY PLAN

NTS

GRAPHIC SCALE

1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE NORTH

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved

Designed by: A. MORITA		Date: 10/21/05	Rev.
Dwn by: J. FRESCAS	Spec No.: 1304	Design file no: 229-25-539	
Reviewed by: S.B.		Drawing Code:	
Submitted by: /s/ Thomas E. Nissen Chief, Mech./Elec. Des. Sec.		File name: N39M-102xxx.dwg Plot date: Dwg scale: AS_NOTED	

DEPARTMENT OF THE ARMY
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SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
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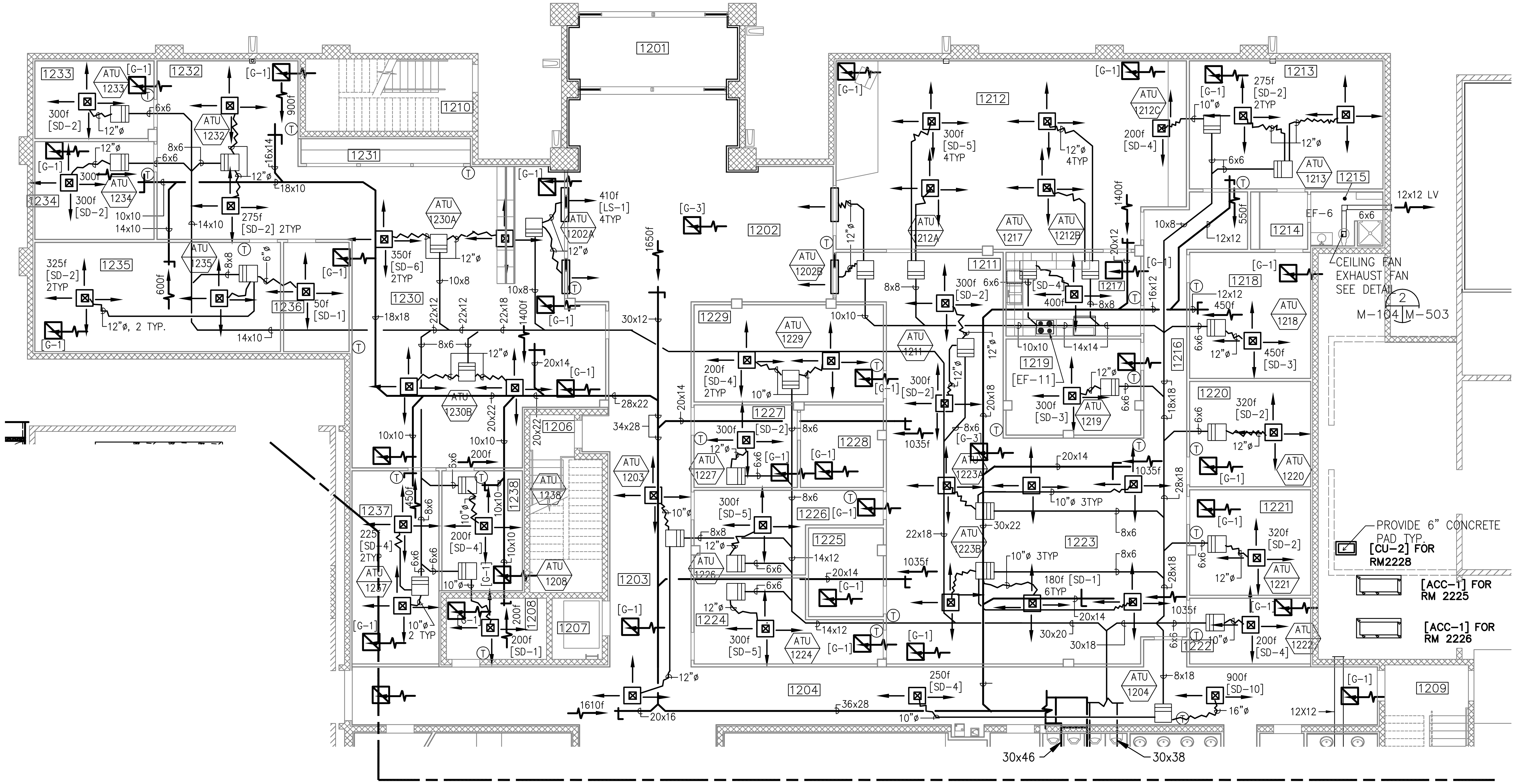
NELLIS AFB NEVADA

F/A-22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL FLOOR PLAN
BUILDING 282
FLOOR PLAN AREA C

Sheet reference number:

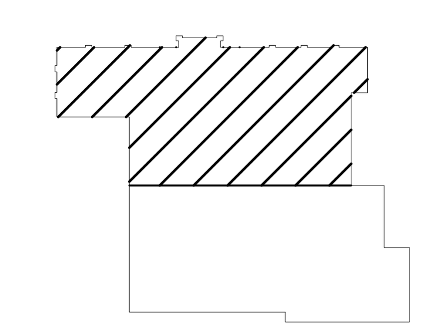
M-103



FOR CONTINUATION SEE SHEET M-105

MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – FIRST FLOOR AREA A

SCALE: 1/8" = 1'-0



KEY PLAN

NTS

GRAPHIC SCALE

1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE

NORTH

US Army Corps of Engineers
Sacramento District

Designed by: A. MORITA		Date: 10/21/05	Rev.
Dwn by: J. FRESCAS	Spec No.: 1304	Design file no: 229-25-539	
Reviewed by: S.B.		Drawing Code:	
Submitted by: /s/ Thomas E. Nissen, Chief, Mech./Elec. Des. Sec.		File name: N39M-103xxx.dwg; Plot date: ; Dwg scale: AS NOTED	

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SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

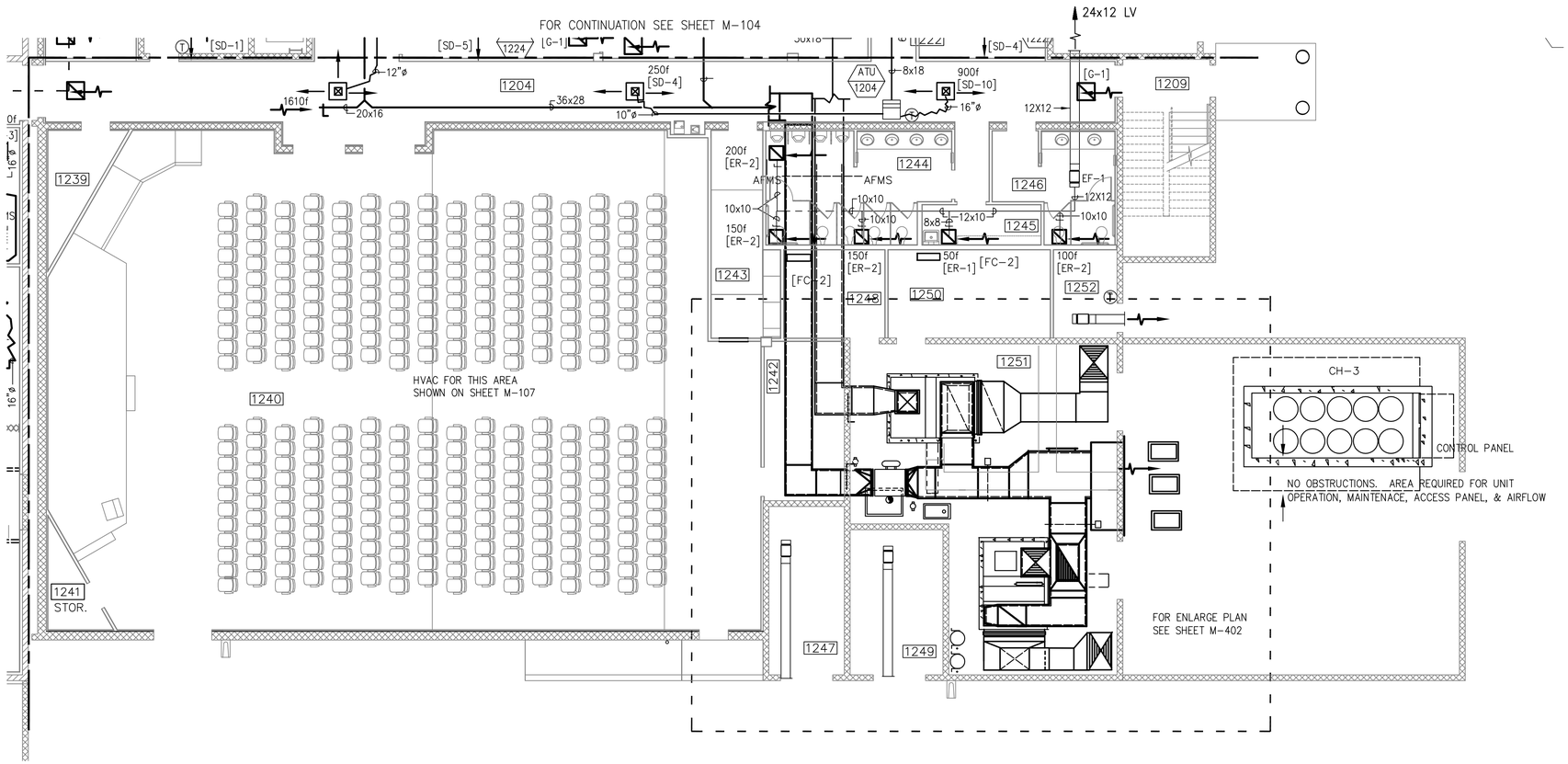
NELLIS AFB NEVADA

F/A-22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL FLOOR PLAN
BUILDING 282 ADDITION
FIRST FLOOR AREA A

Sheet reference number:

M-104



MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – FIRST FLOOR AREA B

SCALE: 1/8" = 1'-0

KEY PLAN
NTS

GRAPHIC SCALE
1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE
NORTH

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date	Approved

Date: 10/21/05
Design file no: 229-25-539
Drawing Code:
File name: N39M-104xxx.dwg
Plot date:
Dwg scale: AS_NOTED

Designed by: A. MORITA
Drwn by: J. FRESCAS
Reviewed by: S.B.
Submitted by: for/ Thomas E. Nissen
Chief, Mech./Elec. Des. Sec.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

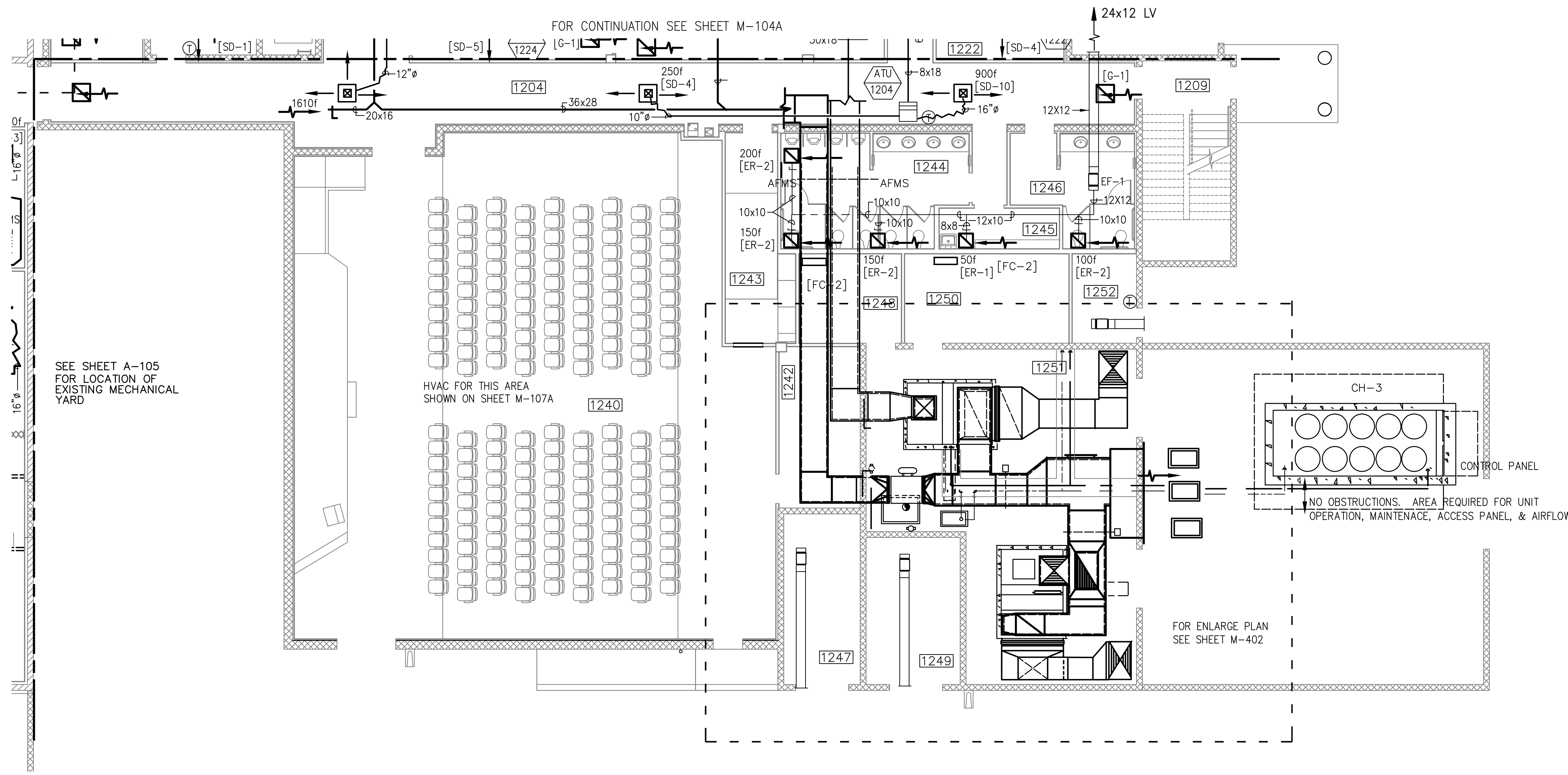
SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

NEVADA
NELLIS AFB
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL FLOOR PLAN
BUILDING 282 ADDITION
FIRST FLOOR AREA B

Sheet reference number:
M-105

Border Revised 03/01/04, DES01102.DWG

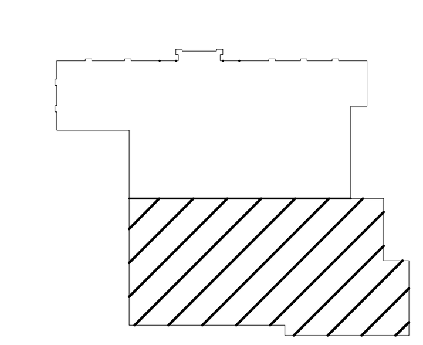
9/15/2004 10:50am N39M-104xxx.dwg



INFORMATION ON THIS SHEET IS INCLUDED IN BID OPTION1

MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – FIRST FLOOR AREA B

SCALE: 1/8" = 1'-0



KEY PLAN

NTS

GRAPHIC SCALE

1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE

NORTH

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved

Designed by: A. MORITA	Date: 10/21/05
Dwn by: J. FRESCAS	Spec No.: 1304
Reviewed by: S.B.	Design file no: 229-25-539
Submitted by: /s/ Thomas E. Nissen, Chief, Mech./Elec. Des. Sec.	Drawing Code:
	File name: N39M-104xxx.dwg
	Plot date:
	Dwg scale: AS_NOTED
	Rev.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

NELLIS AFB NEVADA

F/A-22 ADD/ALTER WEAPONS SCHOOL

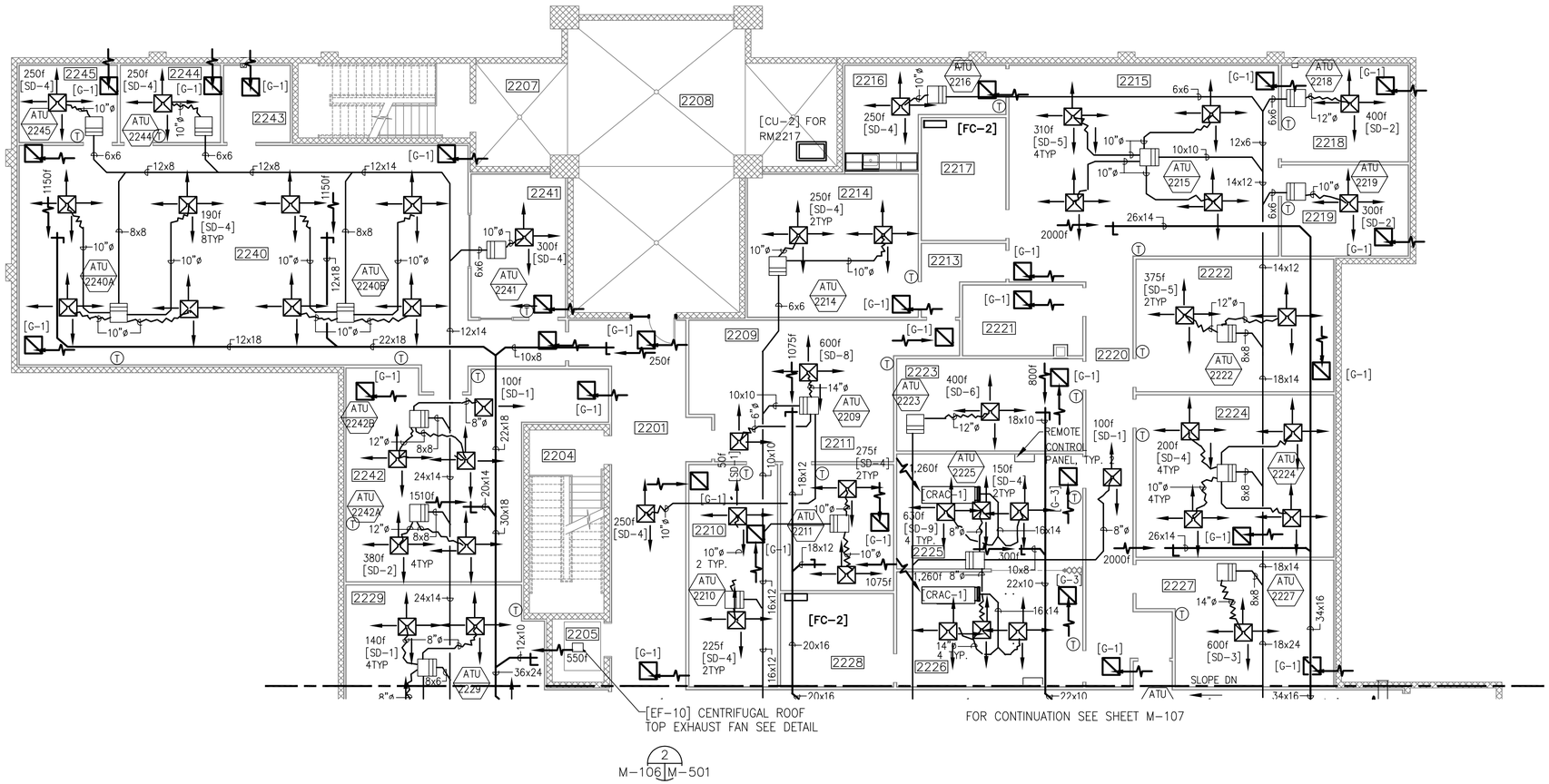
MECHANICAL FLOOR PLAN
BUILDING 282 ADDITION
FIRST FLOOR AREA B

Sheet reference number:

M-105A

9/15/2004 10:50am

N39M-104xxx.dwg



MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – SECOND FLOOR AREA A

SCALE: 1/8" = 1'-0

KEY PLAN
NTS

GRAPHIC SCALE
1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE NORTH

9/15/2004 10:50am N39M-105xxx.dwg

Border Revised 10/01/04, CDES01T02.DWG

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date	Approved

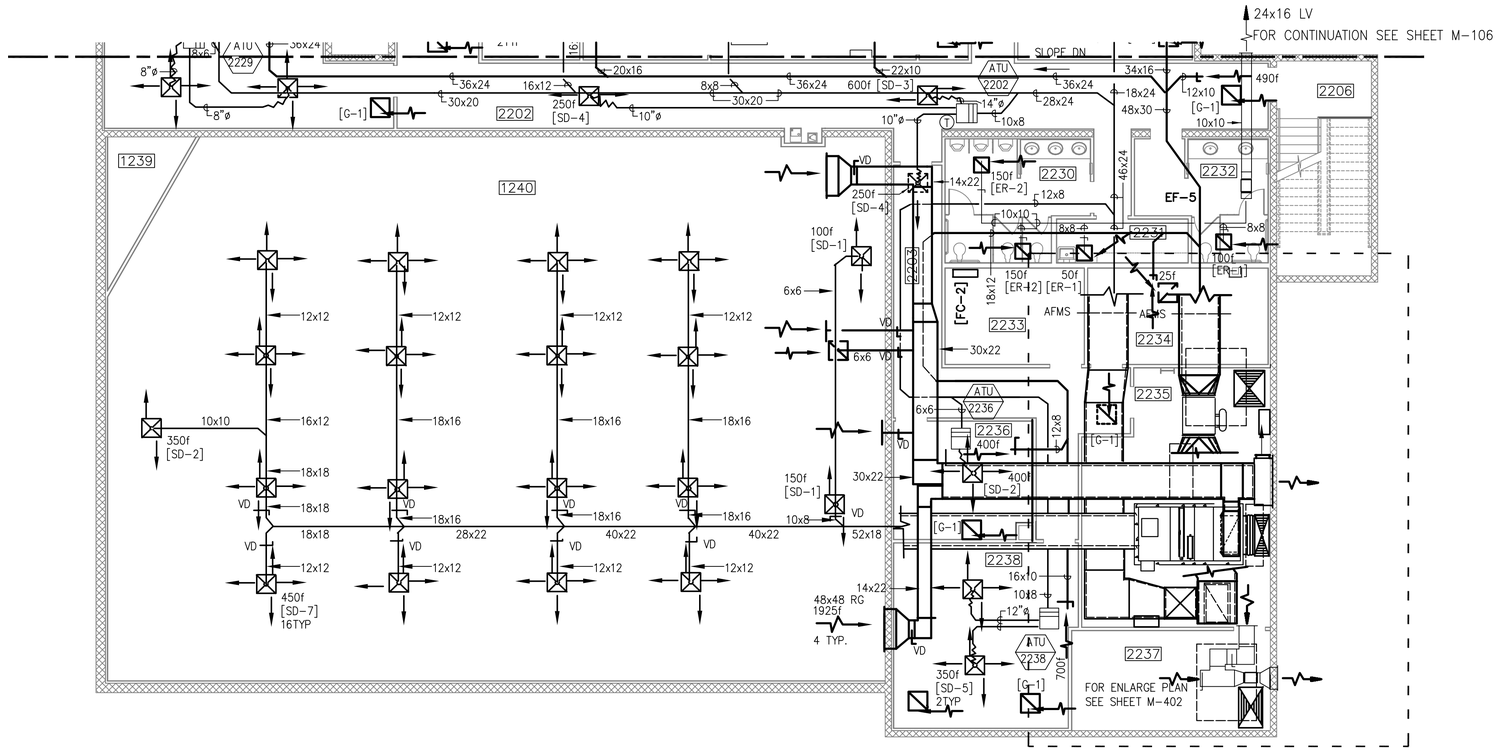
Designed by: A. MORITA
Date: 10/21/05
Drawn by: J. FRESCAS
Spec. No.: 1304
Design file no.: 229-25-539
Reviewed by: S.B.
Drawing Code:
Submitted by: A/E Thomas E. Nilsen Chief, Mech./Elec. Eng. Sec.
File name: N39M-105xxx.dwg
Plot date:
Dwg scale: AS_NOTED

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

NEVADA
NELLIS AFB
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL FLOOR PLAN
BUILDING 282 ADDITION
SECOND FLOOR AREA A

Sheet reference number:
M-106



MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – SECOND FLOOR AREA B

SCALE: 1/8" = 1'-0

KEY PLAN
NTS

GRAPHIC SCALE
1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE
NORTH

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved

Designed by: A. MORITA
Drawn by: J. FRESCAS
Reviewed by: S.B.
Submitted by: /s/ Thomas E. Nissen
Chief, Mech./Elec. Des. Sec.

Date: 10/21/05
Design file no: 239-25-539
Drawing Code:
Spec No.: 1304
File name: N39M-106xxx.dwg
Plot scale:
Dwg scale: AS_NOTED

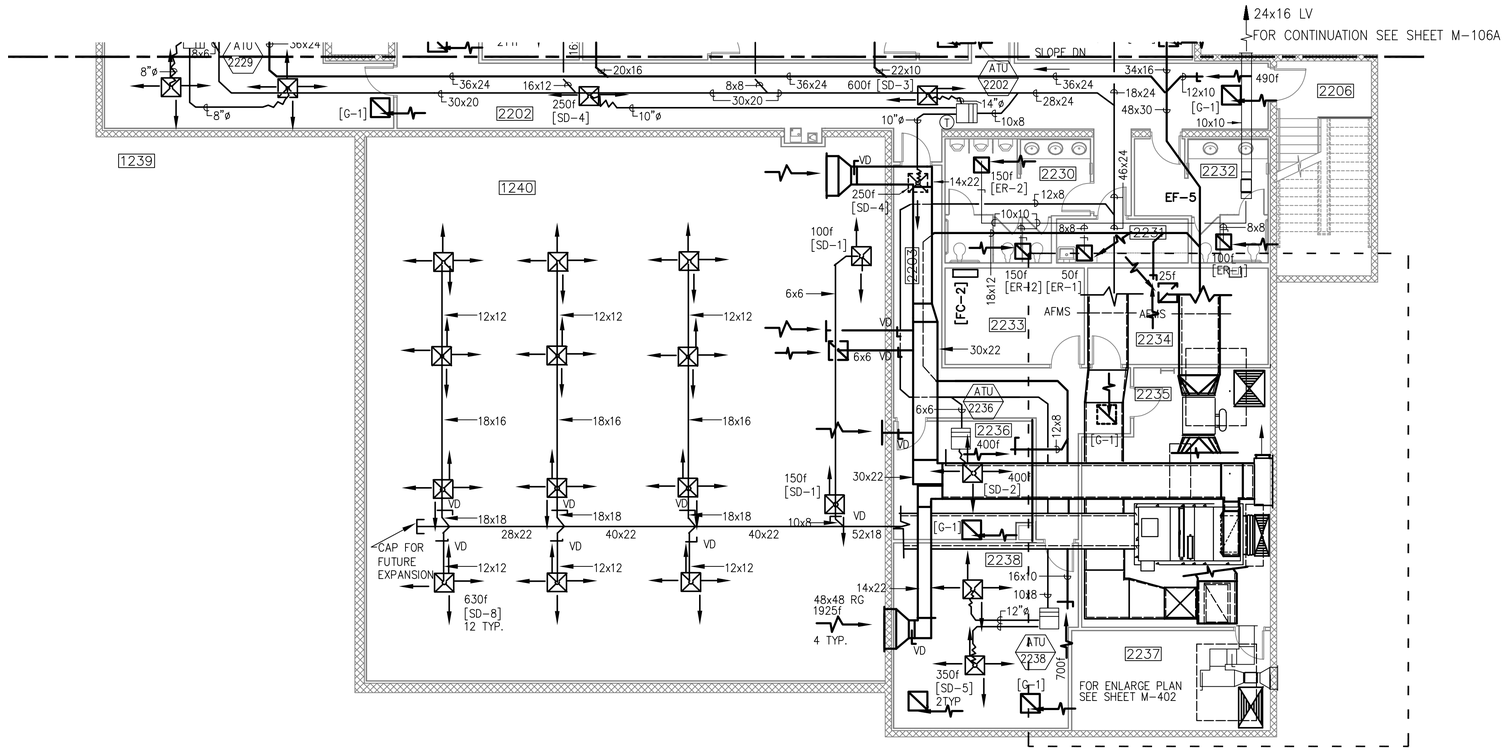
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

NEVADA
NELLIS AFB
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL FLOOR PLAN
BUILDING 282 ADDITION
SECOND FLOOR AREA B

Sheet reference number:
M-107

Border Revised 03/10/04, CDES1102.DWG



INFORMATION ON THIS SHEET IS INCLUDED IN BID OPTION1

MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – SECOND FLOOR AREA B

SCALE: 1/8" = 1'-0

KEY PLAN
NTS

GRAPHIC SCALE
1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE
NORTH

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved

Designed by: A. MORITA
Drawn by: J. FRESCAS
Reviewed by: S.B.
Submitted by: /s/ Thomas E. Nissen Chief, Mech./Elec. Des. Sec.

Date: 10/21/05
Design file no: 239-25-539
Drawing Code:
Spec No.: 1304
File name: N39M-106xxx.dwg
Plot date:
Dwg scale: AS_NOTED
Rev.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

NEVADA
NELLIS AFB
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL FLOOR PLAN
BUILDING 282 ADDITION
SECOND FLOOR AREA B

Sheet reference number:
M-107A

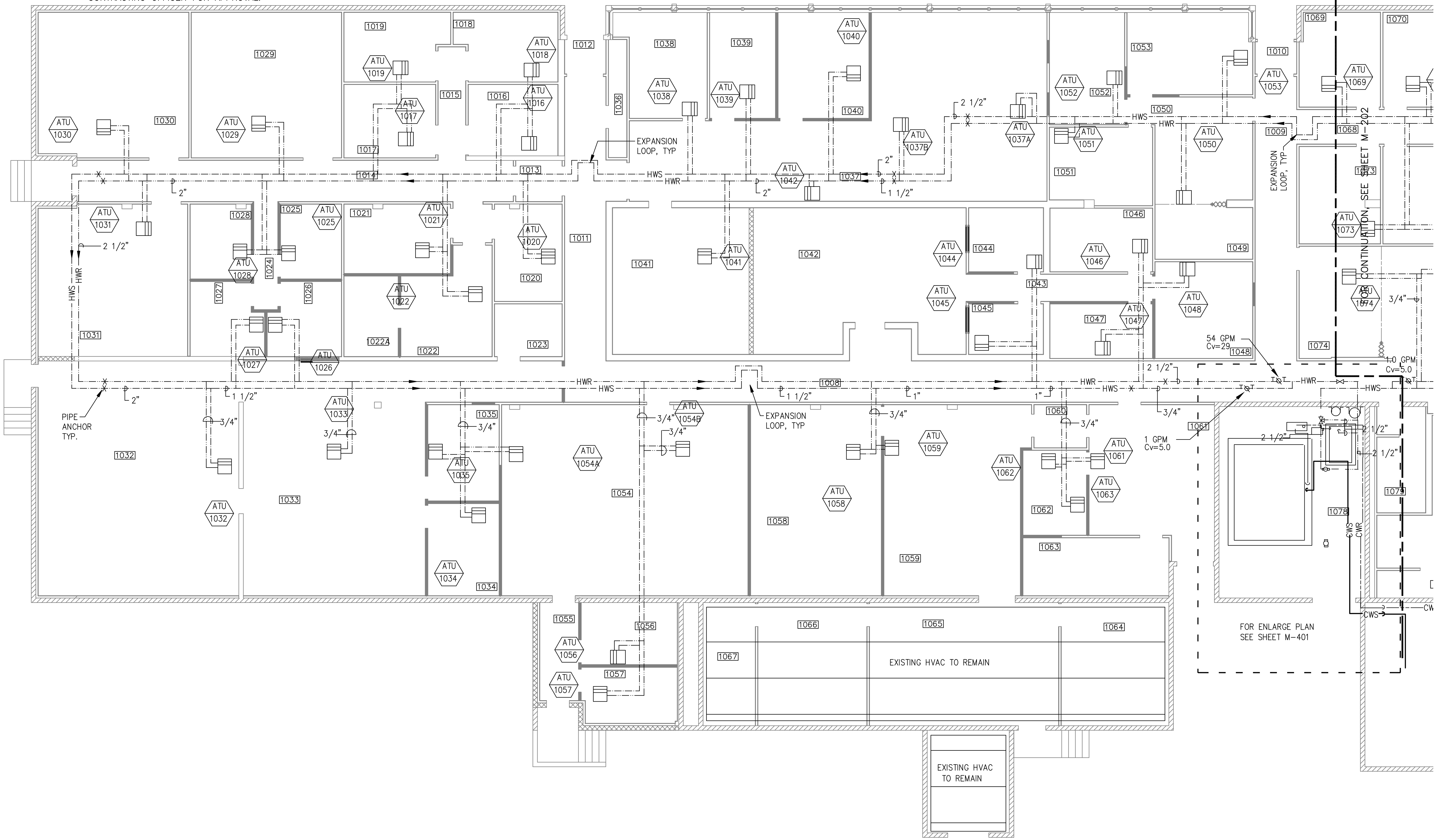
Border Revised 03/10/04, CDES1102.DWG

9/15/2004 10:50am N39M-106xxx.dwg

GENERAL NOTE: APPLY TO ALL MECHANICAL SHEETS

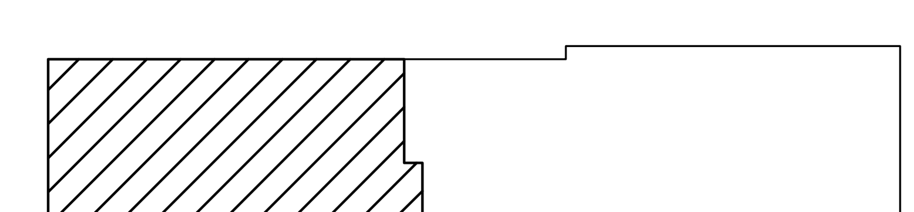
1) ALL PIPE NOT LABLED TO BE 1/2".

2) CONTRACTOR SHALL PROVIDE NESTED EXPANSION LOOPS AS INDICATED ON DRAWINGS BASED ON A MAXIMUM TEMPERATURE OF 180 DEG F AND MINIMUM TEMPERATURE OF 60 DEG F, PIPE MATERIAL & INSULATION. PROVIDE DESIGN AND DESIGN CALCULATIONS TO THE CONTRACTING OFFICER FOR APPROVAL.



MECHANICAL FLOOR PLAN – BUILDING 282 – AREA A

SCALE: 1/8" = 1'-0



KEY PLAN

NTS

GRAPHIC SCALE

1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE NORTH

US Army Corps of Engineers Sacramento District

Designed by: A. MORITA	Date: 10/21/05
Dwn by: A.M.	Spec No.: 1304 / Design file no.: 229-25-539
Reviewed by: S.B.	Drawing Code:
Submitted by: /s/ Thomas E. Nilsen	File name: N39M-201xxx.dwg / Plot date: / Dwg scale: AS_NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT IN-HOUSE DESIGN 1325 'J' STREET SACRAMENTO, CA 95814-2922

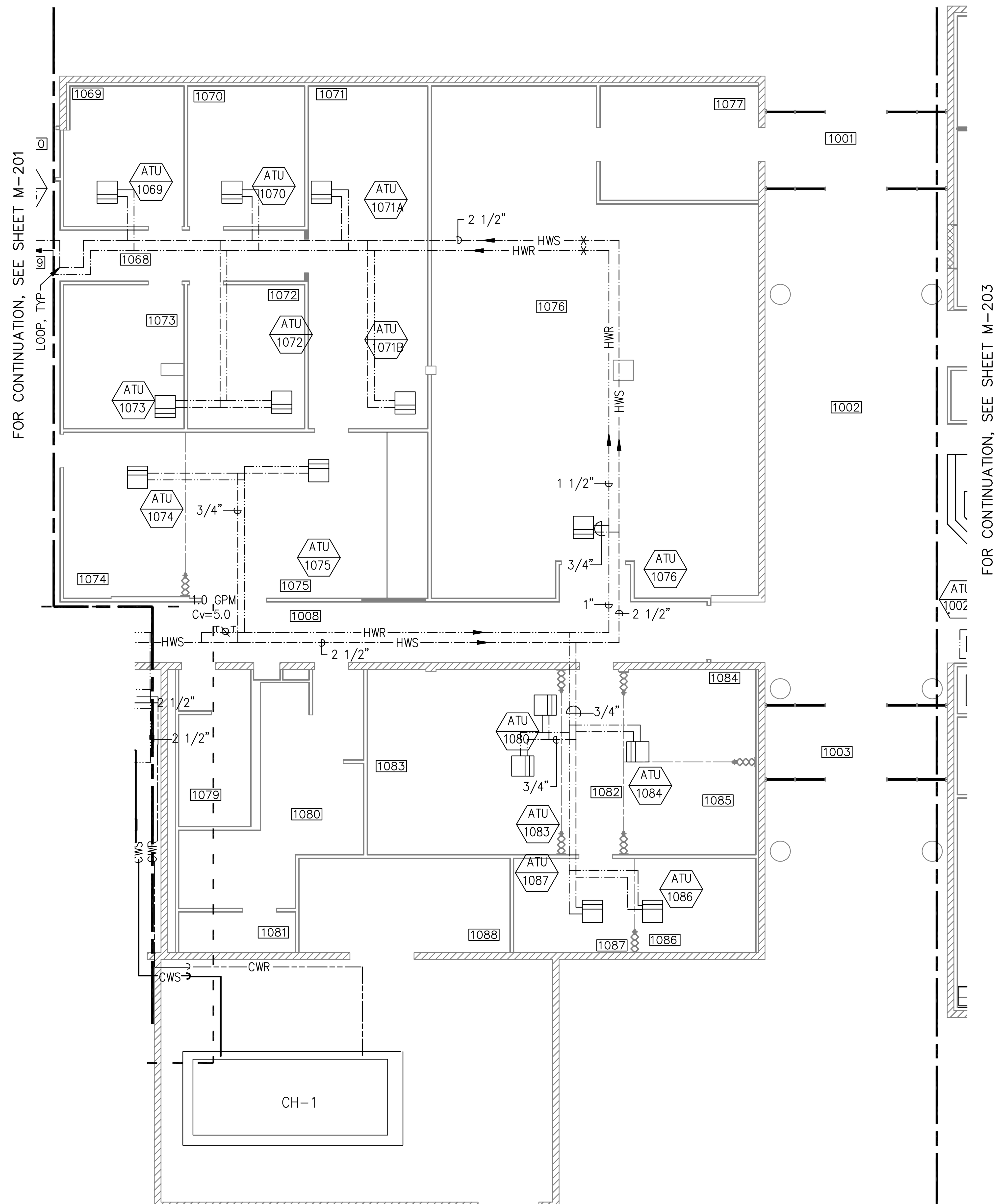
NELLIS AFB NEVADA

F/A-22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL PIPING FLOOR PLAN BUILDING 282 FLOOR PLAN AREA A

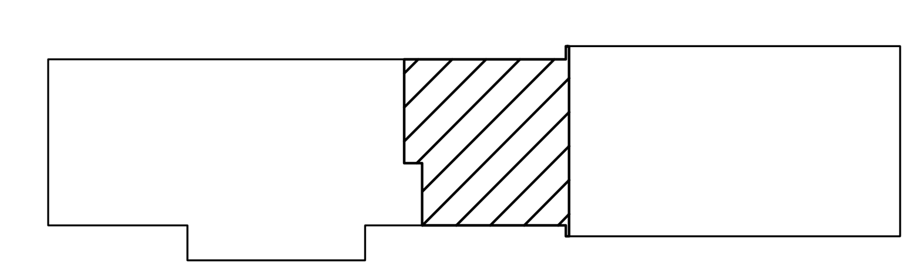
Sheet reference number: M-201

9/15/2004 10:50am N39M-100xxx.dwg



MECHANICAL PIPING FLOOR PLAN – BUILDING 282 – AREA B

SCALE: 1/8" = 1'-0



KEY PLAN

NTS

GRAPHIC SCALE

1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE NORTH

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved

Designed by: A. MORTA
Dwn by: A.M.
Reviewed by:
Submitted by: /s/ Thomas E. Nissen, Chief, Mech./Elec. Des. Sec.
Spec No.: 1304
Date: 10/21/05
Design file no: 229-25-539
Drawing Code:
File name: N39M-202xxx.dwg
Plot date:
Dwg scale: AS_NOTED
Rev.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

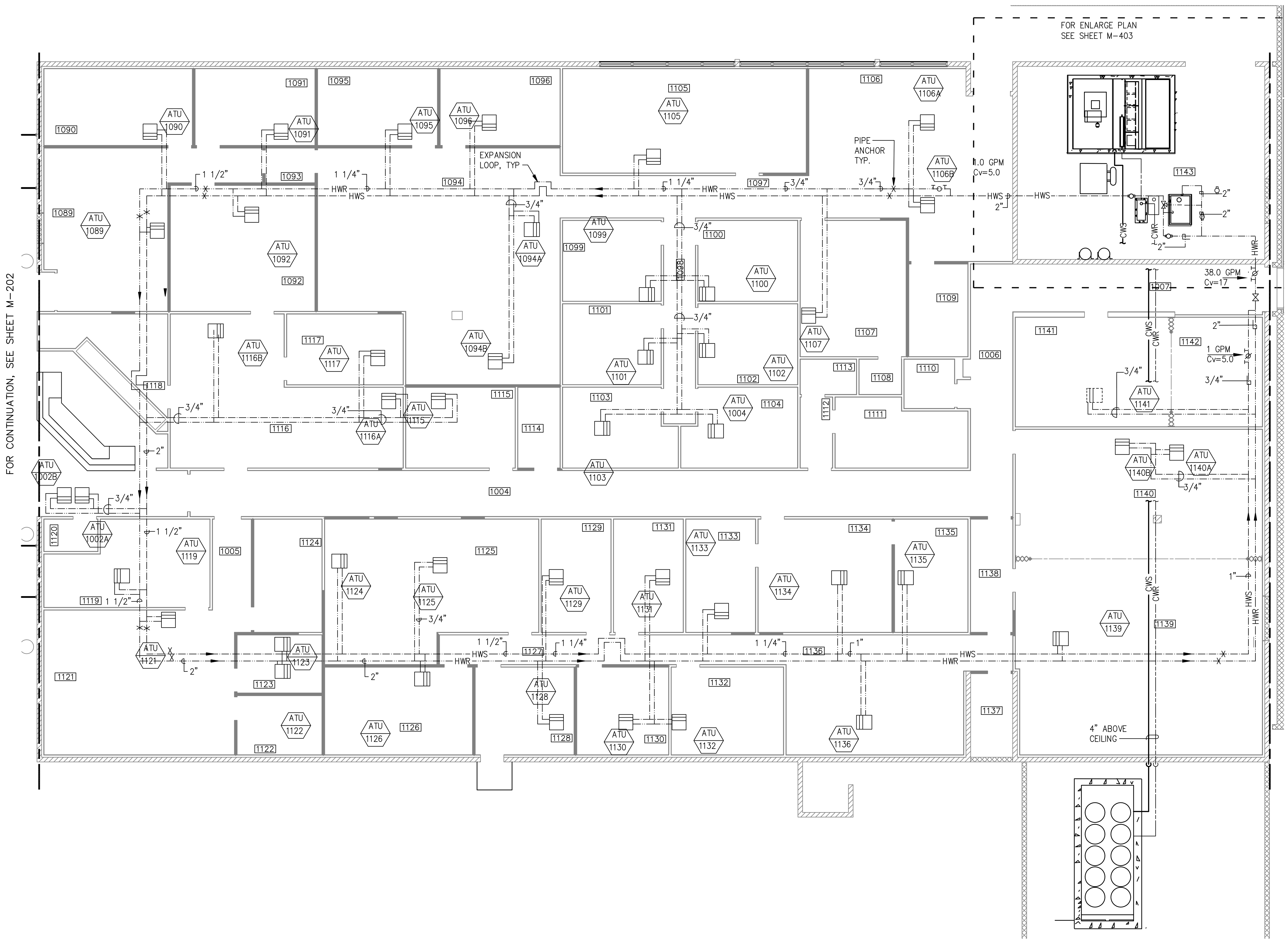
SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

NELLIS AFB NEVADA

F/A-22 ADD/ALTER WEAPONS SCHOOL

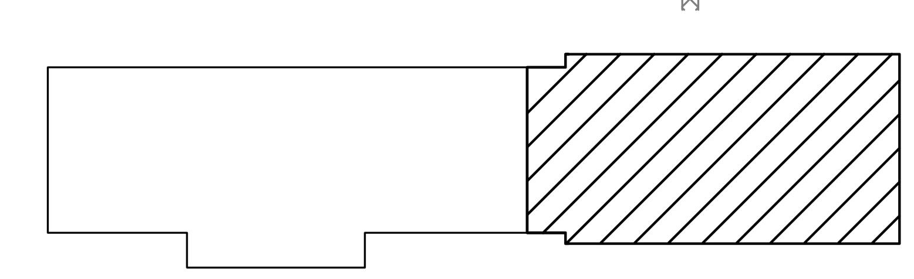
MECHANICAL PIPING FLOOR PLAN
BUILDING 282
FLOOR PLAN AREA B

Sheet reference number: M-202



MECHANICAL FLOOR PLAN – BUILDING 282 – AREA C

SCALE: 1/8" = 1'-0



KEY PLAN

NTS

GRAPHIC SCALE

1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE NORTH

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved

Designed by: A. MORITA		Date: 10/21/05	Rev.
Dwn by: A.M.	Spec No.: 1304	Design file no: 229-25-539	
Reviewed by:		Drawing Code:	
Submitted by: S.B. Chief, Mech./Elec. Des. Sec.		File name: N39M-203xxx.dwg Plot date: Dwg scale: AS_NOTED	

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
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1325 'J' STREET
SACRAMENTO, CA 95814-2922

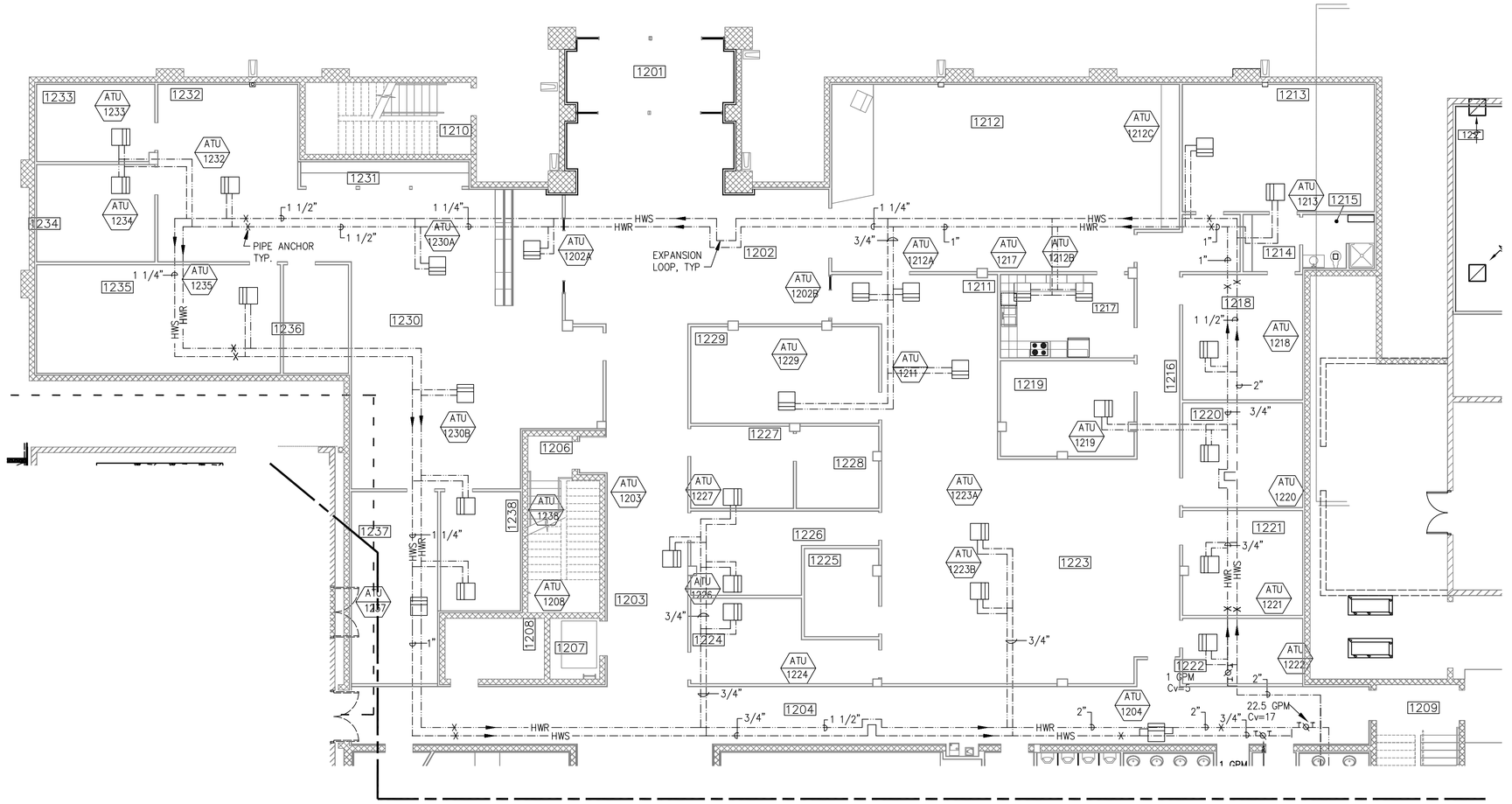
NELLIS AFB NEVADA

F/A-22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL PIPING FLOOR PLAN
BUILDING 282
FLOOR PLAN AREA C

Sheet reference number:

M-203



FOR CONTINUATION, SEE SHEET M–205

MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – FIRST FLOOR AREA A

SCALE: 1/8" = 1'–0

KEY PLAN
NTS

GRAPHIC SCALE
1/8"=1'–0" 0' 2' 4' 8' 16' 24'

REFERENCE
NORTH

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date	Approved

Date: 10/21/05
Design file no: 229–25–539
Drawing Code:
File name: N39M–103xxx.dwg
Plot date:
Dwg scale: AS_NOTED

Designed by: A. MORITA
Spec. No.: 1304
Dwn by: J. FRESCAS
Reviewed by: S.B.
Submitted by: Chief, Mech./Elec. Des. Sec.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN–HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814–2922

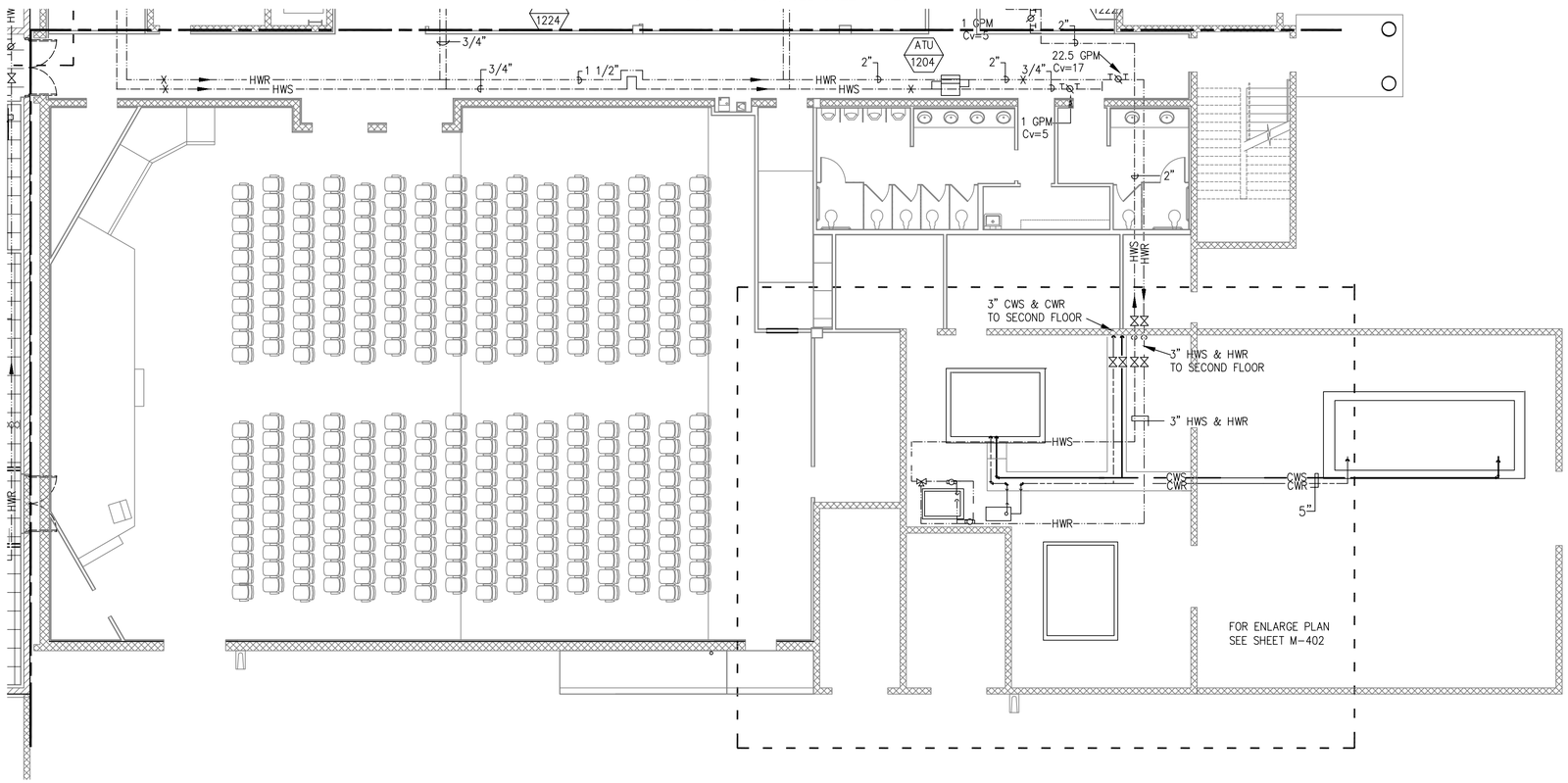
NEVADA
NELLIS AFB
F/A–22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL PIPING FLOOR PLAN
BUILDING 282 ADDITION
FIRST FLOOR AREA A

Sheet reference number:
M–204

Border Revised 03/01/04, CDES01T02.DWG

9/15/2004 10:50am N39M–103xxx.dwg

FOR CONTINUATION, SEE SHEET M-204



MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – FIRST FLOOR AREA B

SCALE: 1/8" = 1'-0

KEY PLAN
NTS

GRAPHIC SCALE
1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE
NORTH

Border Revised 03/01/04, CDES01102.DWG

9/15/2004 10:50am N39M-104xxx.dwg

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date	Approved	Symbol

Date: 10/21/05
Design file no: 229-25-539
Drawing Code:
File name: N39M-104xxx.dwg
Plot date:
Dwg scale: AS_NOTED

Designed by: A. MORITA
Dwn by: J. FRESCAS
Reviewed by: S.B.
Submitted by: /s/ Thomas F. Nissen Chief, Mech./Elec. Des. Sec.
Spec No.: 1304

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

NEVADA

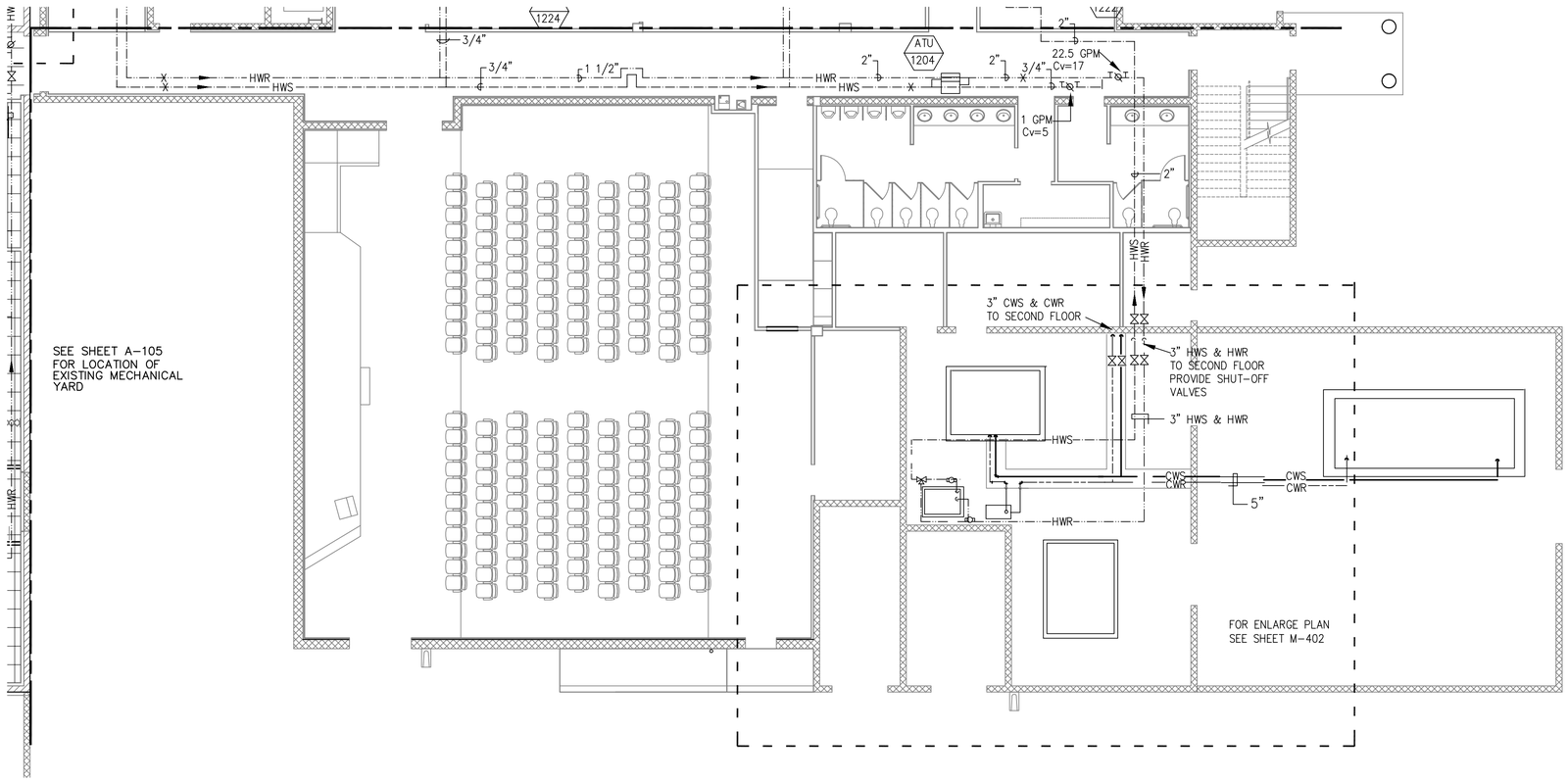
NELLIS AFB

F/A-22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL PIPING FLOOR PLAN
BUILDING 282 ADDITION
FIRST FLOOR AREA B

Sheet reference number:
M-205

FOR CONTINUATION, SEE SHEET M-204A



MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – FIRST FLOOR AREA B

SCALE: 1/8" = 1'-0

KEY PLAN
NTS

GRAPHIC SCALE
1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE
NORTH

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date	Approved	Symbol

Date: 10/21/05
Design file no.: 229-25-539
Drawing Code:
File name: N39M-104xxx.dwg
Plot date:
Dwg scale: AS_NOTED
Spec. No.: 1304
Designed by: A. MORITA
Drn by: J. FRESCAS
Reviewed by: S.B.
Submitted by: /s/ Thomas E. Nissen
Chief, Mech./Elec. Des. Sec.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

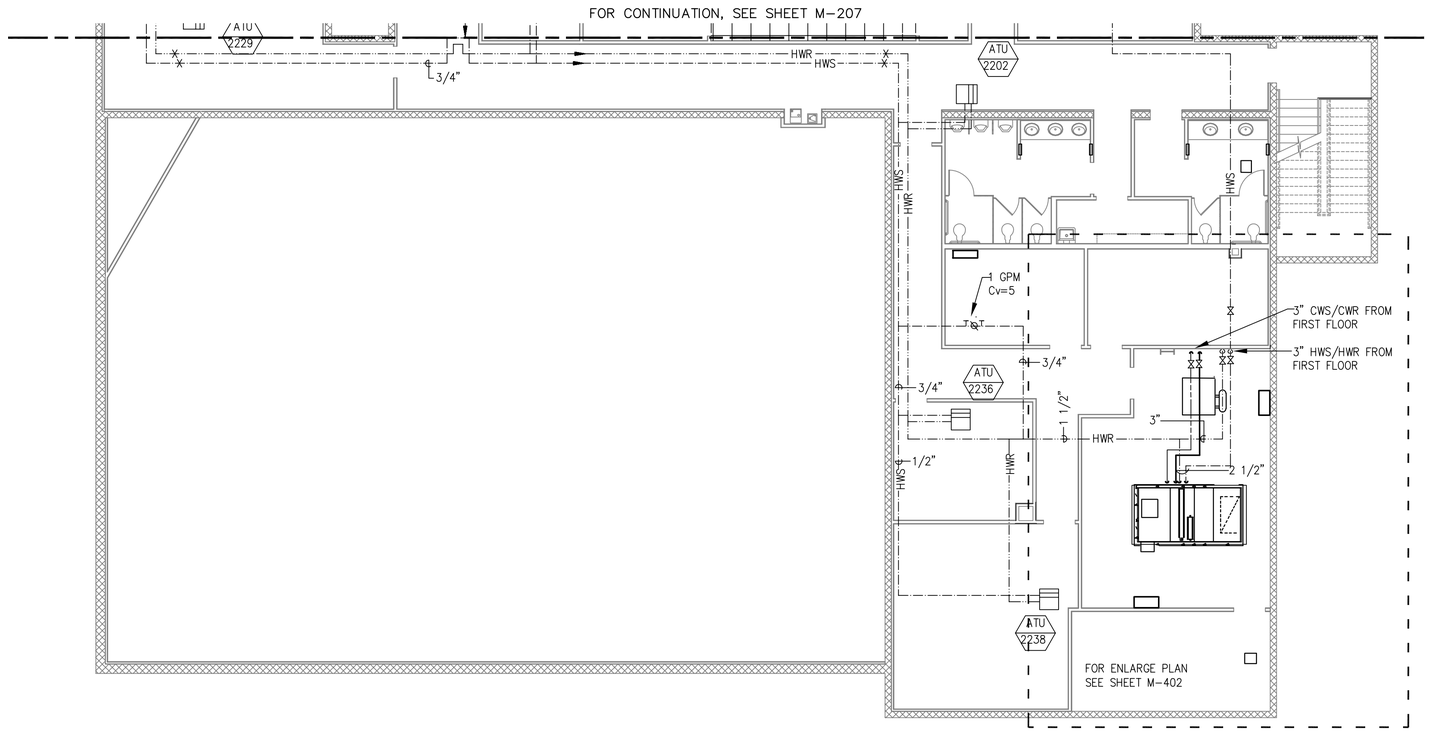
SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

NEVADA
NELLIS AFB
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL PIPING FLOOR PLAN
BUILDING 282 ADDITION
FIRST FLOOR AREA B

Sheet reference number:
M-205A

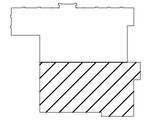
Border Revised 03/07/04, CDES0102.DWG

9/15/2004 10:50am N39M-104xxx.dwg



MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – SECOND FLOOR AREA B

SCALE: 1/8" = 1'-0



KEY PLAN
NTS

GRAPHIC SCALE
1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE
NORTH

US Army Corps of Engineers
Sacramento District

No.	Description	Date	Approved
Symbol			

Date: 10/21/05
Design file no.: 239-25-539
Drawing Code:
File name: N39M-106xxx.dwg
Plot date:
Dwg scale: AS_NOTED

Designed by: A. MORITA
Spec No.: 1304
Dwn by: J. FRESCAS
Reviewed by: S.B.
Approved by: Chief, Mech./Elec. Des. Sec.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

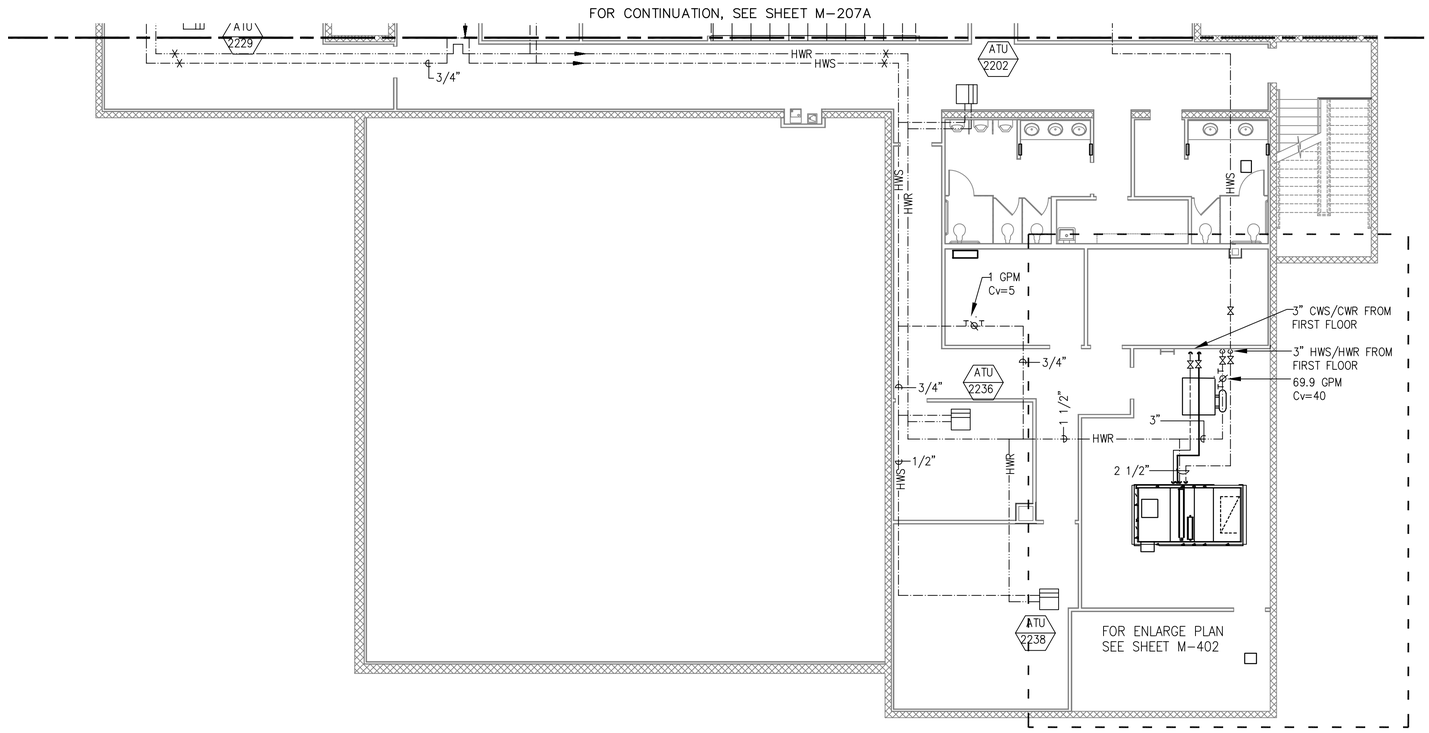
SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

NEVADA
NELLIS AFB
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL PIPING FLOOR PLAN
BUILDING 282 ADDITION
SECOND FLOOR AREA B

Sheet reference number:
M-206

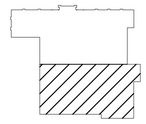
Border Revised 03/01/04, 02639102.DWG

9/15/2004 10:50am N39M-106xxx.dwg



MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – SECOND FLOOR AREA B

SCALE: 1/8" = 1'-0



KEY PLAN
NTS

REFERENCE
NORTH

GRAPHIC SCALE
1/8"=1'-0" 0' 2' 4' 8' 16' 24'

US Army Corps of Engineers
Sacramento District

No.	Description	Date	Approved
Symbol			

Date: 10/21/05
Design file no.: 229-25-539
Drawing Code:
File name: N39M-106xxx.dwg
Plot date:
Dwg scale: AS_NOTED

Designed by: A. MORITA
Spec. No.: 1304
Drawn by: J. FRESCAS
Reviewed by: A.M.
Submitted by: /s/ Thomas E. Nielsen Chief, Mech./Elec. Des. Sec.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

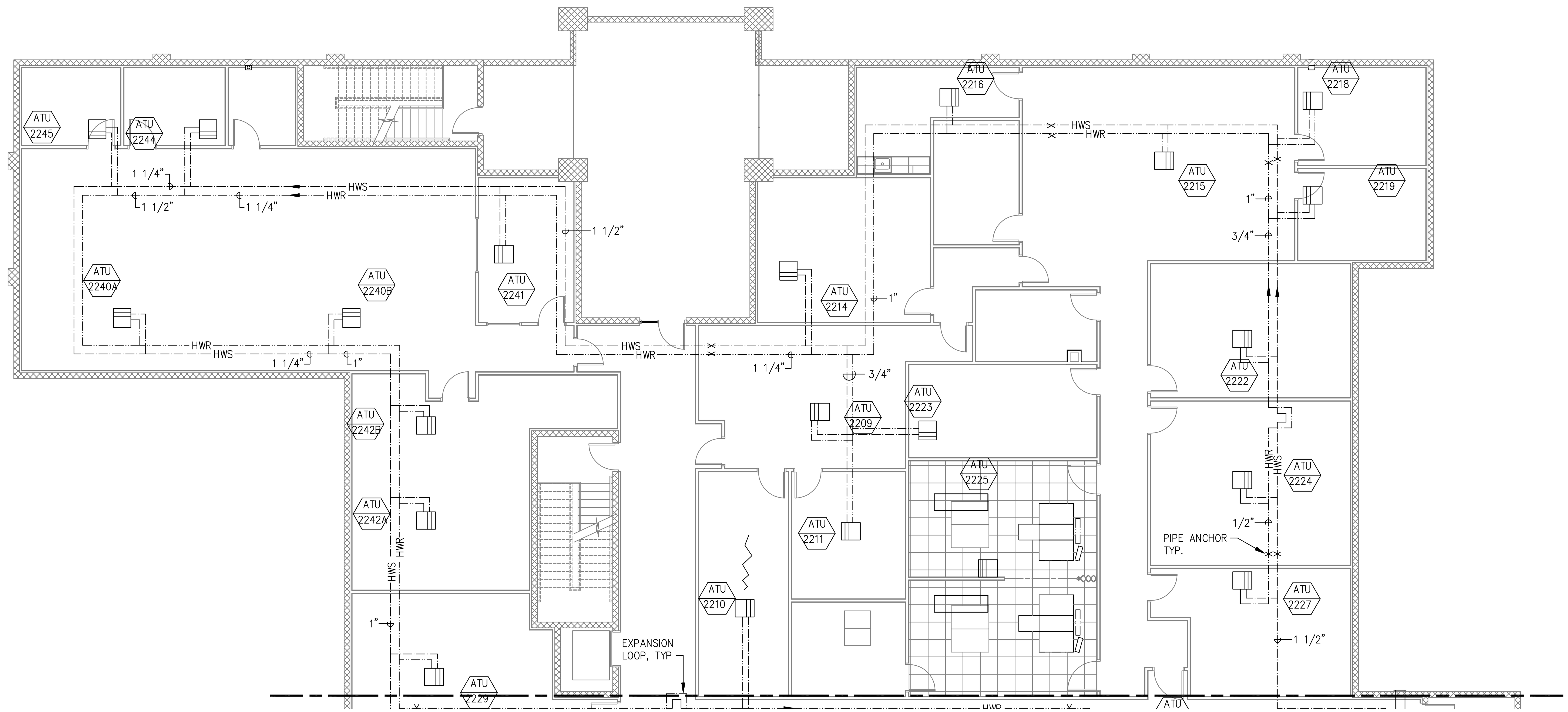
SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

NEVADA
NELLIS AFB
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL PIPING FLOOR PLAN
BUILDING 282 ADDITION
SECOND FLOOR AREA B

Sheet reference number:
M-206A

Border Revised 03/07/04, CDES0102.DWG

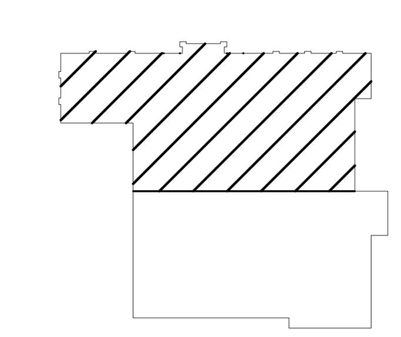
9/15/2004 10:50am N39M-106xxx.dwg



FOR CONTINUATION, SEE SHEET M-206

MECHANICAL FLOOR PLAN – BUILDING 282 ADDITION – SECOND FLOOR AREA A

SCALE: 1/8" = 1'-0



KEY PLAN

NTS

GRAPHIC SCALE

1/8"=1'-0" 0' 2' 4' 8' 16' 24'

REFERENCE

NORTH

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved

Designed by: A. MORITA
Dwn by: J. FRESCAS
Spec No.: 1304
Reviewed by:
Submitted by: /s/ Thomas E. Nissen, Chief, Mech./Elec. Des. Sec.
Date: 10/21/05
Rev.
Design file no: 229-25-539
Drawing Code:
File name: N39M-105xxx.dwg
Plot date:
Dwg scale: AS_NOTED

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

NELLIS AFB NEVADA

F/A-22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL PIPING FLOOR PLAN
BUILDING 282 ADDITION
SECOND FLOOR AREA A

Sheet reference number:

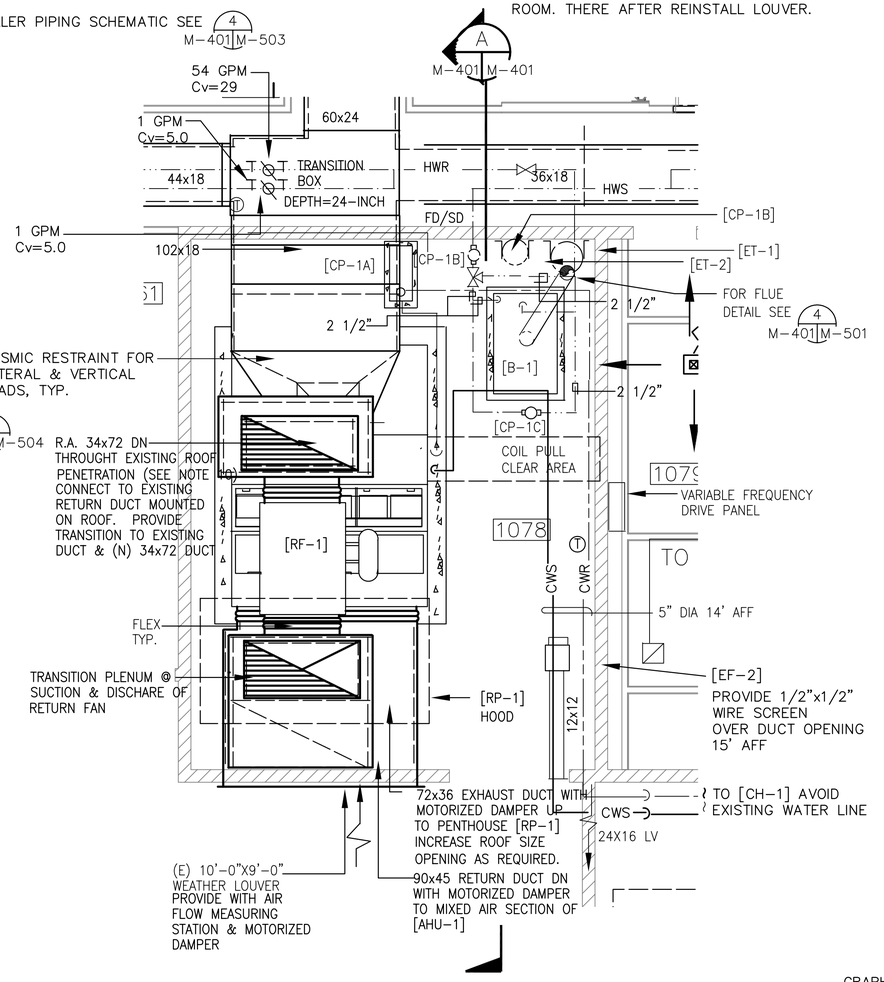
M-207

9/15/2004 10:50am N39M-105xxx.dwg

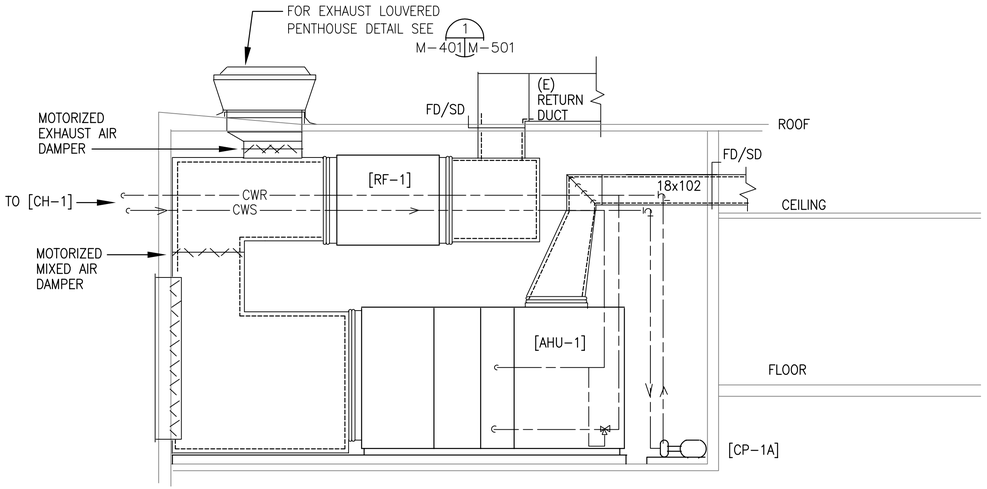
NOTES:

1. PROVIDE A 6" HOUSE KEEPING PAD FOR THE AIRHANDLING UNIT, CHILLER UNIT, EXPANSION TANK, FLOOR MOUNTED PUMP & BOILER.
2. COIL PULL FOR [AHU–1] AS INDICATED. TO REMAIN CLEAR.
3. SEE (1) M–401|M–504 FOR TYPICAL PIPE SUPPORT DETAILS.

   ALL FLOOR MOUNTED EQUIPMENT SHALL BE ANCHORED. FOR DETAIL, SEE (2) M–401|M–504 IN LIEU OF ANCHORING TO THE FLOOR,
4. EXPANSION TANKS MAY BE SECURED TO AN ADJACENT WALL WITH 2–1"x16 GAUGE STRAPS AND WALL ANCHOR BOLTS
5. ALL PIPING & IN–LINE PUMPS TO BE MOUNTED 8' AFF UNLESS OTHERWISE STATED.
6. FOR CHILLER PIPING SCHEMATIC SEE (4) M–401|M–503
7. FOR BOILER PIPING SCHEMATIC SEE (2) M–401|M–502
8. ALL PIPING SHALL NOT PASS OVER THE MAIN SWITCH BOARD, DISTRIBUTION PANEL BOARDS, TELEPHONE/DATA ELECTRONIC RACK–MOUNTED EQUIPMENT OR BACKBOARD MOUNTED ELECTRONIC EQUIPMENT. FOR TELEPHONE/DATA CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH THE CONTRACTING OFFICER .
9. ROOF MOUNTED DUCT TO [RF–1] TO REMAIN.
10. INCREASE THE SIZE OF EXISTING ROOF PENETRATIONS AS REQUIRED.
11. FOR FLOOR MOUNTED PUMP, SEE (3) M–401|M–503
12. SECTIONS OF [AHU–1] ARE TO BE BROUGHT THROUGH THE EXISTING MECHANICAL ROOM DOOR AND ASSEMBLED. IF SECTIONS DO NOT FIT THROUGH EXISTING DOOR OPENING THEN CONTRACTOR IS TO REMOVE EXISTING 10'X9' WEATHER LOUVER FOR ACCESS TO MECHANICAL ROOM. THERE AFTER REINSTALL LOUVER.
13. FOR DETAIL OF FIRE/SMOKE DAMPER SEE (5) M–401|M–503
14. FOR IN–LINE PUMP INSTALLATION SCHEMATIC SEE (1) M–401|M–503
15. PLATFORM FOR SUSPENDING MECHANICAL EQUIPMENT SEE DETAIL (1) M–401|M–505
16. FOR CHILLED WATER COIL SEE DETAIL (3) M–401|M–502



EXISTING BUILDING 282
ENLARGED MECHANICAL ROOM – ROOM (1) M–101|M–401
SCALE: 1/4" = 1'–0



SECTION A (A) M–401|M–401
SCALE: 1/4" = 1'–0

GRAPHIC SCALE
0' 1' 2' 4' 8' 12'
1/4"=1'–0"

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date	Approved

Date: 10/21/05
Design file no(s): 239–25–539
Drawing Code:
Spec No(s): 1304
File name: N39M–400xxx.dwg
Plot date:
Dwg scale: AS_NOTED

Designed by: A. MORITA
Drn by: J. FRESCAS
Reviewed by: S.B.
Submitted by: Jeff Thomas E. Nilssen
Chief, Mech./Elec. Des. Sec.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

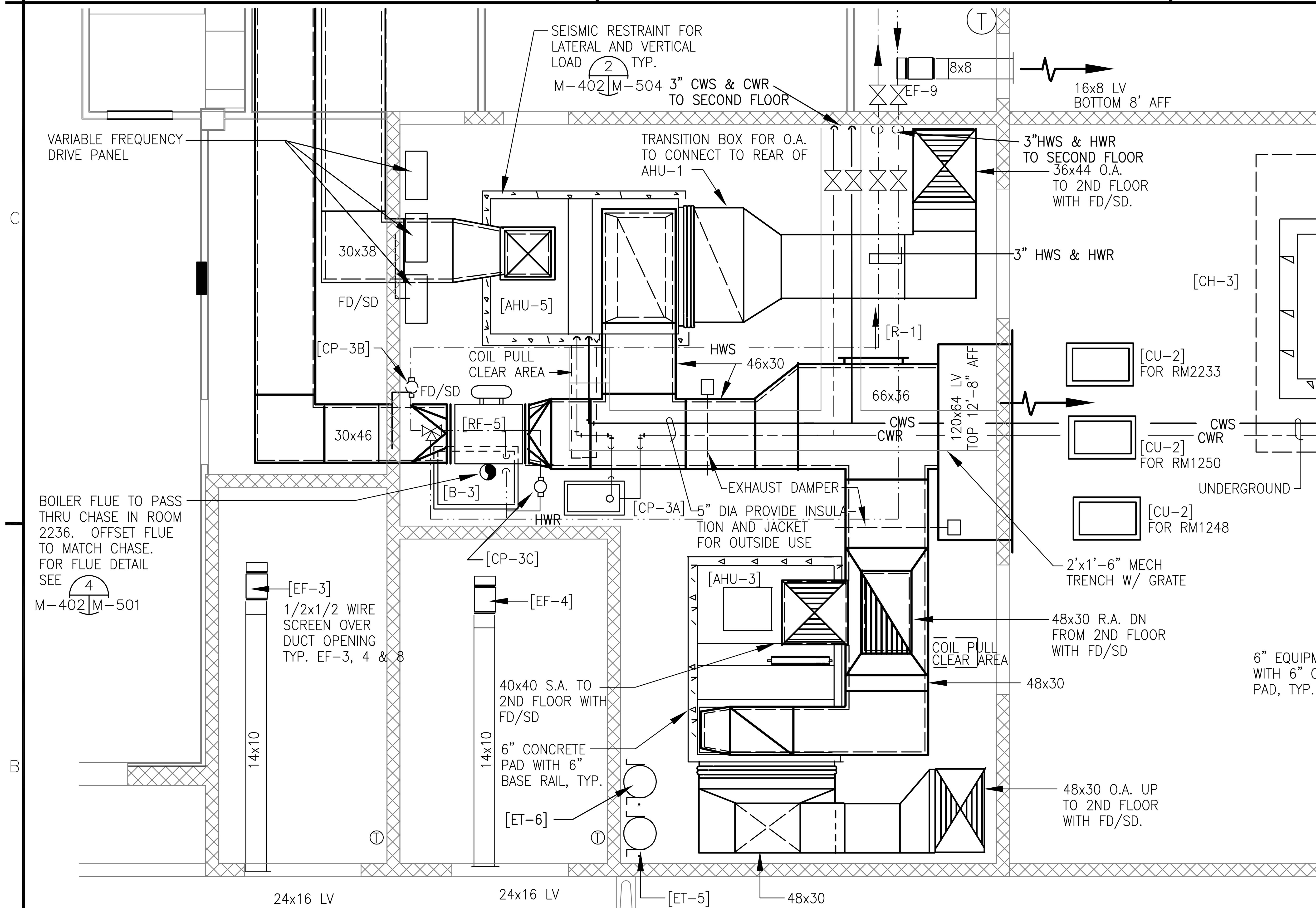
SACRAMENTO DISTRICT
IN–HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814–2922

NEVADA
NELLIS AFB
F/A–22 ADD/ALTER WEAPONS SCHOOL
ENLARGED MECHANICAL FLOOR PLAN
BUILDING 282

Sheet reference number:
M–401

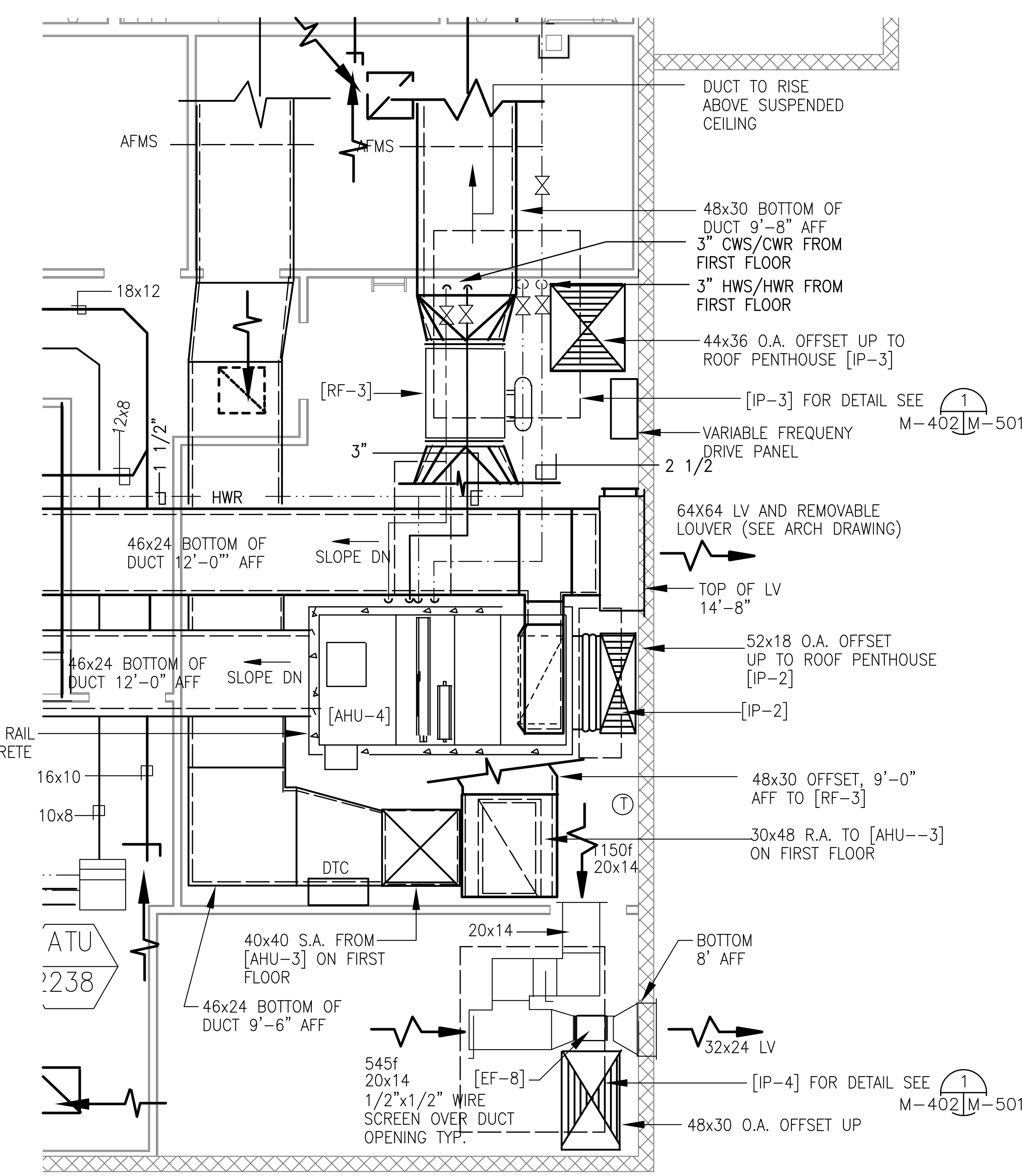
Border Revised 03/01/04, 02/24/03.DWG

9/15/2004 10:50am N39M–400xxx.dwg



ENLARGED MECHANICAL ROOM – FIRST FLOOR
ADDITION BUILDING 282 – ROOM 1251

SCALE: 1/4" = 1'-0 — 1 M-105 M-402



ENLARGED MECHANICAL ROOM – SECOND FLOOR
ADDITION BUILDING 282 – ROOM

SCALE: 1/4" = 1'-0 — 2 M-107 M-402

NOTES:

1. PROVIDE A 6" HOUSE KEEPING PAD FOR THE AIRHANDLING UNIT, CHILLER UNIT, EXPANSION TANK, FLOOR MOUNTED PUMP & BOILER.
2. COIL PULL FOR [AHU-3,4 & 5] AS INDICATED TO REMAIN CLEAR.
3. SEE 1 M-402 M-504 FOR TYPICAL PIPE SUPPORT DETAILS.

   ALL FLOOR MOUNTED EQUIPMENT SHALL BE ANCHORED. FOR DETAIL, SEE 2 M-402 M-504 IN LIEU OF ANCHORING TO THE FLOOR,
4. EXPANSION TANKS TO BE SECURED TO AN ADJACENT WALL WITH 2-1"x16 GAUGE STRAPS AND WALL ANCHOR BOLTS.
5. ALL PIPING & IN-LINE PUMPS TO BE MOUNTED 8' AFF UNLESS OTHERWISE STATED.
6. FOR CHILLER PIPING SCHEMATIC SEE 4 M-402 M-503
7. FOR BOILER PIPING SCHEMATIC SEE 2 M-402 M-502
8. ALL PIPING SHALL NOT PASS OVER THE MAIN SWITCH BOARD, DISTRIBUTION PANEL BOARDS, TELEPHONE/DATA ELECTRONIC RACK-MOUNTED EQUIPMENT OR BACKBOARD MOUNTED ELECTRONIC EQUIPMENT. FOR TELEPHONE/DATA CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH THE CONTRACTING OFFICER .
9. FOR FLOOR MOUNTED PUMP SEE DETAIL 3 M-402 M-503
10. FOR DETAIL OF FIRE/SMOKE DAMPER SEE DETAIL 5 M-402 M-503
11. SECTIONS OF [AHU-4] ARE TO BE BROUGHT THROUGH THE MECHANICAL ROOM DOOR OR REMOVABLE LOUVER.
12. FOR IN-LINE PUMP INSTALLATION SEE SCHEMATIC 1 M-402 M-503
13. PLATFORM FOR SUSPENDING MECHANICAL EQUIPMENT SEE DETAIL 1 M-402 M-505
13. FOR CHILLED WATER COIL SEE DETAIL 3 M-402 M-502

GRAPHIC SCALE

1/4"=1'-0" 0' 1' 2' 4' 8' 12'

REFERENCE NORTH

US Army Corps of Engineers
Sacramento District

Designed by: A. MORITA	Date: 10/21/05	Rev.
Dwn by: J. FRESCAS	Spec No.: 1304	Design file no: 229-25-539
Reviewed by: S.B.		Drawing Code:
Submitted by: /s/ Thomas E. Nissen, Chief, Mech./Elec. Des. Sec.		File name: N39M-400xxx.dwg; Plot date: ; Dwg scale: AS_NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

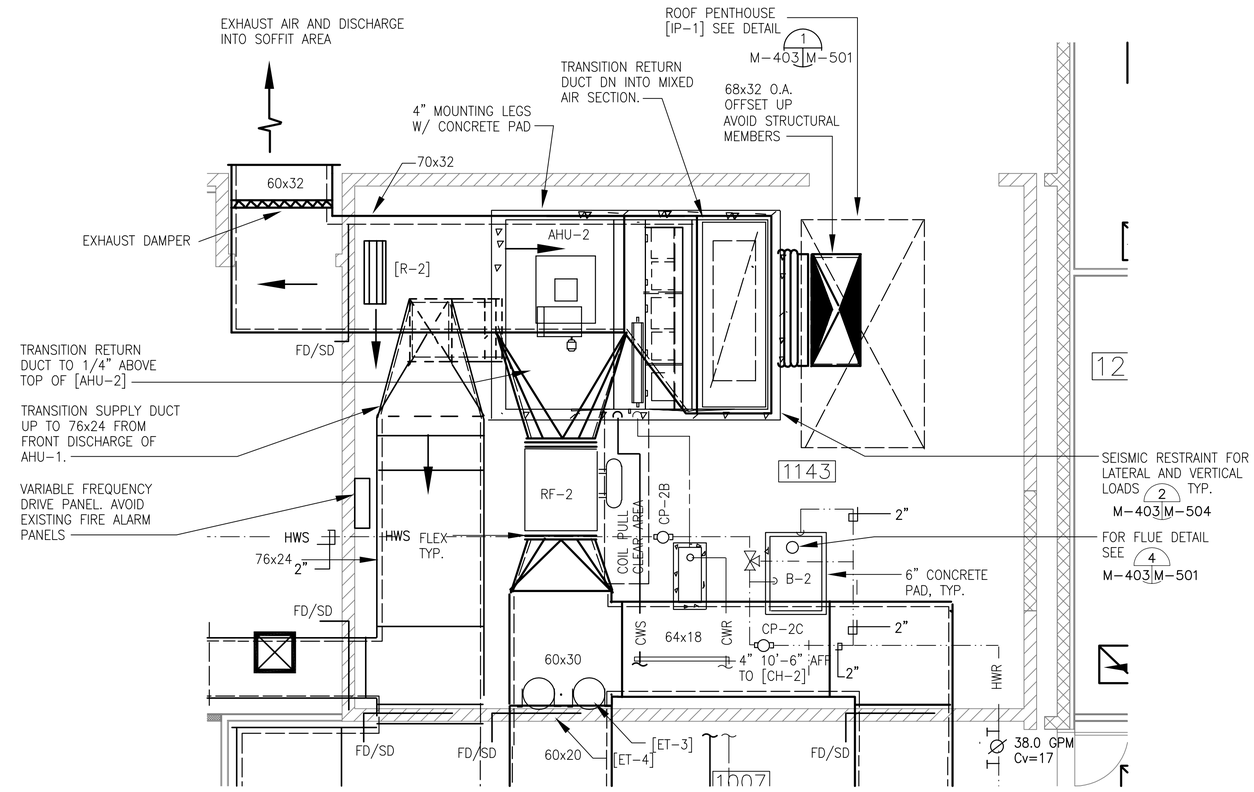
SACRAMENTO DISTRICT IN-HOUSE DESIGN 1325 'J' STREET SACRAMENTO, CA 95814-2922

NELLIS AFB — NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL
ENLARGED MECHANICAL FLOOR PLAN BUILDING 282 ADDITION

Sheet reference number: M-402

NOTES:

1. PROVIDE A 6" HOUSE KEEPING PAD FOR THE AIRHANDLING UNIT. EXPANSION TANK, FLOOR MOUNTED PUMP REFRIGERATED AIR DRYER & BOILER.
2. COIL PULL FOR [AHU-2] AS INDICATED. TO REMAIN CLEAR.
3. SEE (1) M-403|M-504 FOR TYPICAL PIPE SUPPORT DETAILS.
4. ALL FLOOR MOUNTED EQUIPMENT SHALL BE ANCHORED. FOR DETAIL, SEE (2) M-403|M-504 IN LIEU OF ANCHORING TO THE FLOOR,
5. EXPANSION TANKS MAY BE SECURED TO AN ADJACENT WALL WITH 2-1"x16 GAUGE STRAPS AND WALL ANCHOR BOLTS
6. ALL PIPING & IN-LINE PUMPS TO BE MOUNTED 8' AFF UNLESS OTHERWISE INDICATED.
7. FOR CHILLER PIPING SCHEMATIC SEE (4) M-403|M-503
8. FOR BOILER PIPING SCHEMATIC SEE (2) M-403|M-502
9. ALL PIPING SHALL NOT PASS OVER THE MAIN SWITCH BOARD, DISTRIBUTION PANEL BOARDS, TELEPHONE/DATA ELECTRONIC RACK-MOUNTED EQUIPMENT OR BACKBOARD MOUNTED ELECTRONIC EQUIPMENT. FOR TELEPHONE /DATA CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING W/ THE CONTRACTING OFFICER .
10. FOR IN-LINE PUMP INSTALLATION SCHEMATIC, SEE (1) M-403|M-503
11. SECTIONS OF [AHU-2] ARE TO BE BROUGHT THROUGH THE NEW MECHANICAL ROOM DOOR AND ASSEMBLED.
12. FOR DETAIL OF FIRE/SMOKE DAMPER SEE DETAIL (5) M-403|M-503
13. FOR FLOOR MOUNTED PUMP SEE (3) M-403|M-503
14. TOP OF [RF-2] TO BE MOUNTED 1/4" BELOW BOTTOM OF TRUSS.
15. PLATFORM FOR SUSPENDING MECHANICAL EQUIPMENT SEE DETAIL (1) M-403|M-505
16. FOR CHILLED WATER COIL SEE DETAIL (3) M-403|M-502
17. [AHU-2] UNIT SHALL NOT BE MORE THAN 80 INCHES IN HEIGHT.



EXISTING BUILDING 282
ENLARGED MECHANICAL ROOM – ROOM 1143 (1) M-103|M-403

SCALE: 1/4" = 1'-0

GRAPHIC SCALE

1/4"=1'-0" 0' 1' 2' 4' 8' 12'

Border Revised 03/07/04, CDSHT02.DWG

US Army Corps of Engineers
Sacramento District

Rev.	Description	Date	Approved	Symbol

Date: 10/21/05
Design file no(s): 239-25-539
Drawing Code:
Spec No(s): 1304
File name: N39M-400xxx.dwg
Plot date:
Dwg scale: AS_NOTED

Designed by: A. MORITA
Drn. by: L. FRESCAS
Reviewed by: S.B.
Submitted by: A. Thomas / E. Nissen
Chief, Mech./Elec. Des. Sec.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

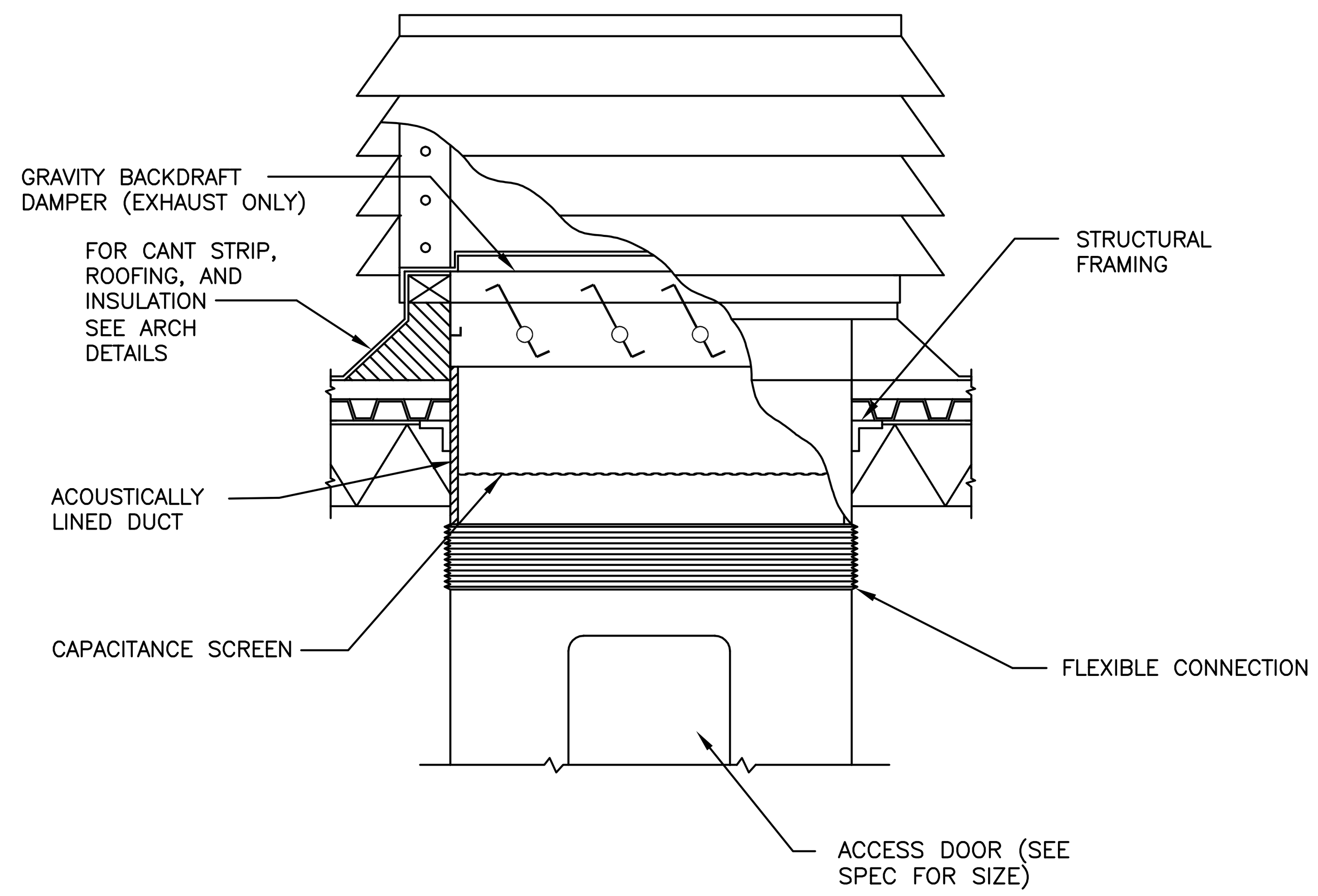
SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 J STREET
SACRAMENTO, CA 95814-2922

NEVADA
NELLIS AFB
F/A-22 ADD/ALTER WEAPONS SCHOOL

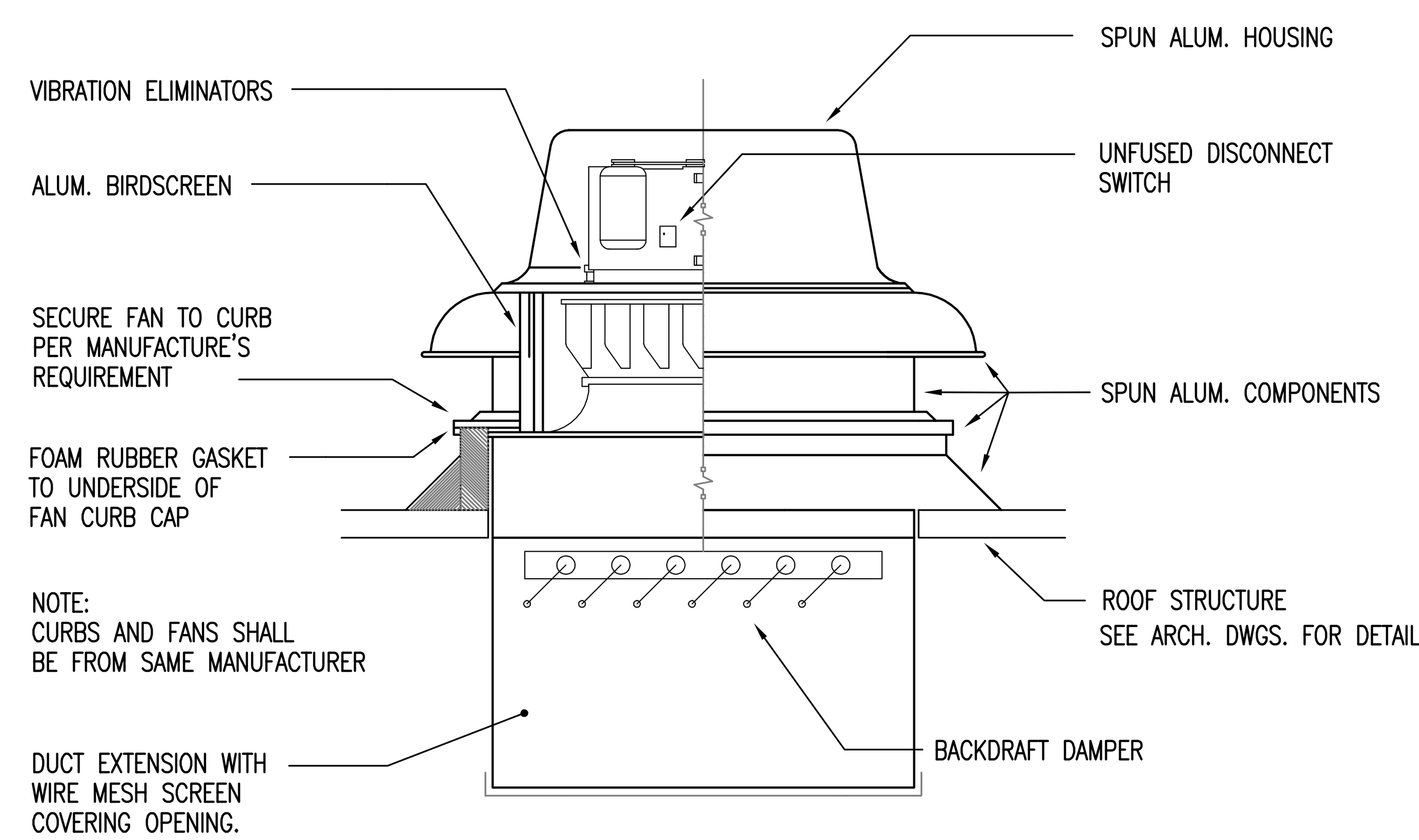
ENLARGED MECHANICAL FLOOR PLAN BUILDING 282

Sheet reference number:
M-403

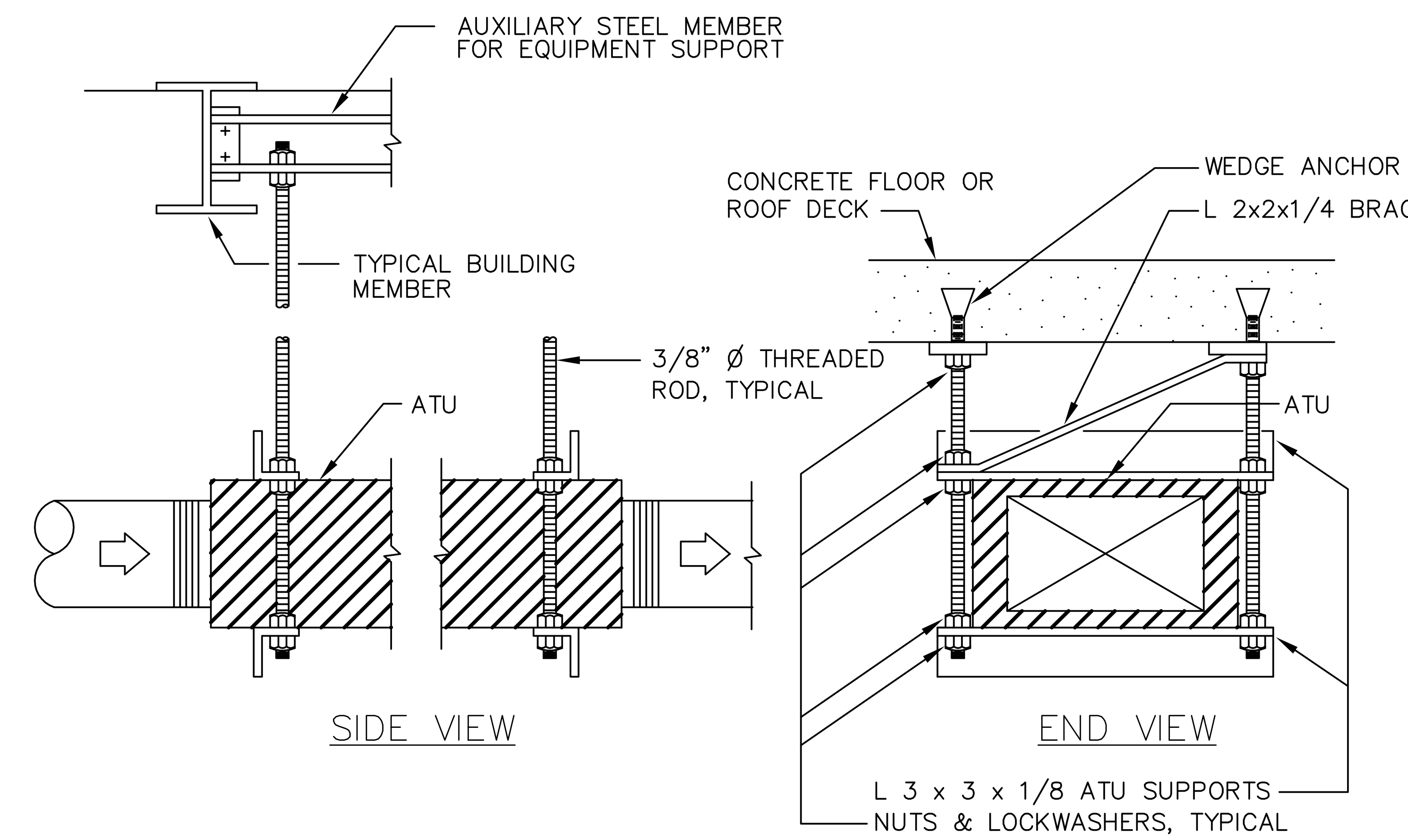
9/15/2004 10:50am N39M-400xxx.dwg



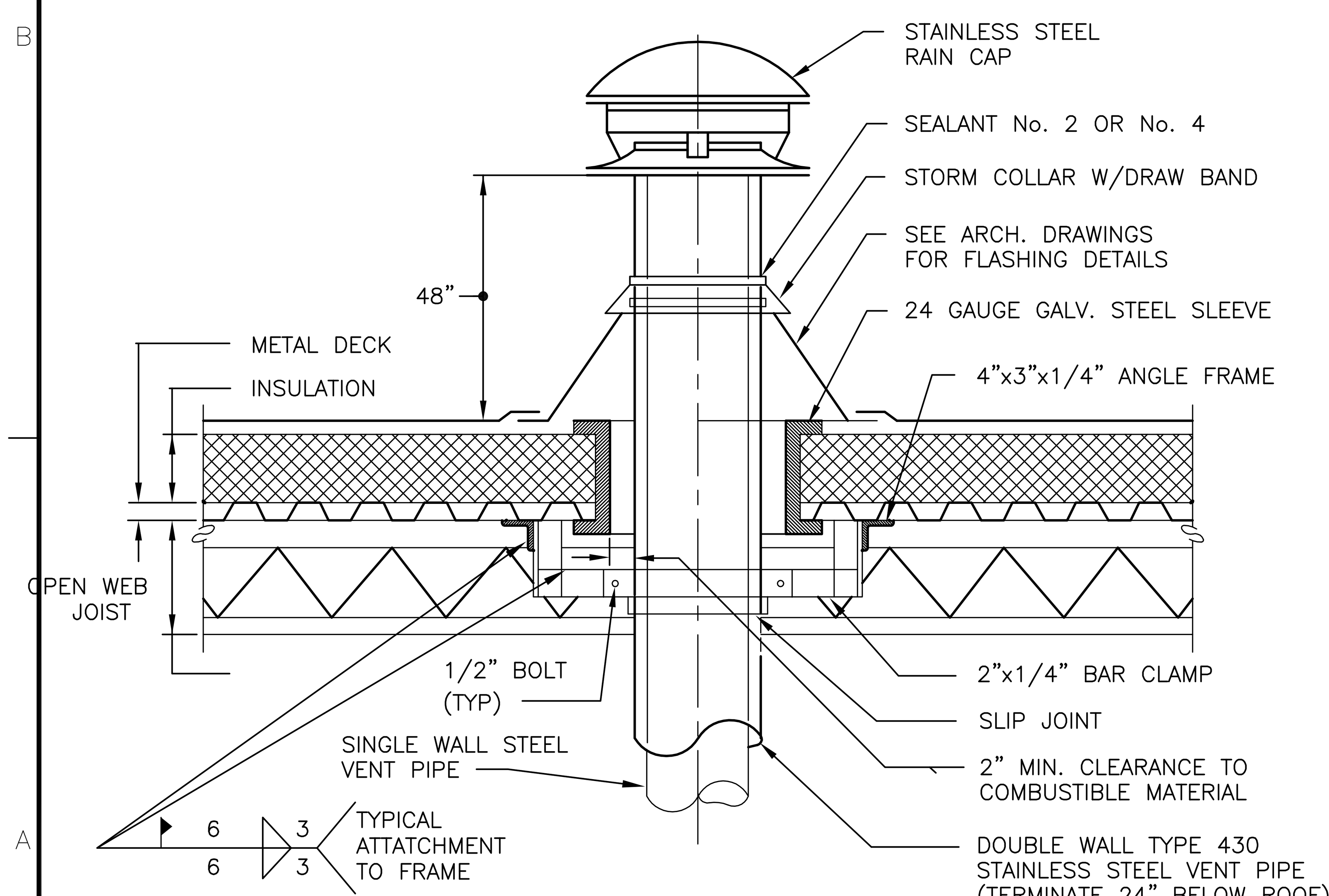
INLET OR EXHAUST LOUVERED PENTHOUSE (1)
SCALE NONE
M-401 M-402 M-403 | M-501



ROOF MOUNTED CENTRIFUGAL EXHAUST FAN DETAIL (2)
SCALE NONE
M-106 | M-501



AIR TERMINAL UNIT MOUNTING DETAIL (3)
SCALE NONE
TYP. | M-501



FLUE DETAIL (4)
SCALE NONE
M-401 M-402 M-403 | M-501

US Army Corps of Engineers
Sacramento District

Symbol | Description | Date | Approved

Designed by: A.M. | Dwn by: A.M. | Reviewed by: S.B. | Submitted by: Chief, Mech/Elec Des. Sec.
Spec No.: 1304
Date: 10/21/05 | Design file no: 229-25-539 | Drawing Code:
File name: | Plot date: | Dwg scale: AS NOTED
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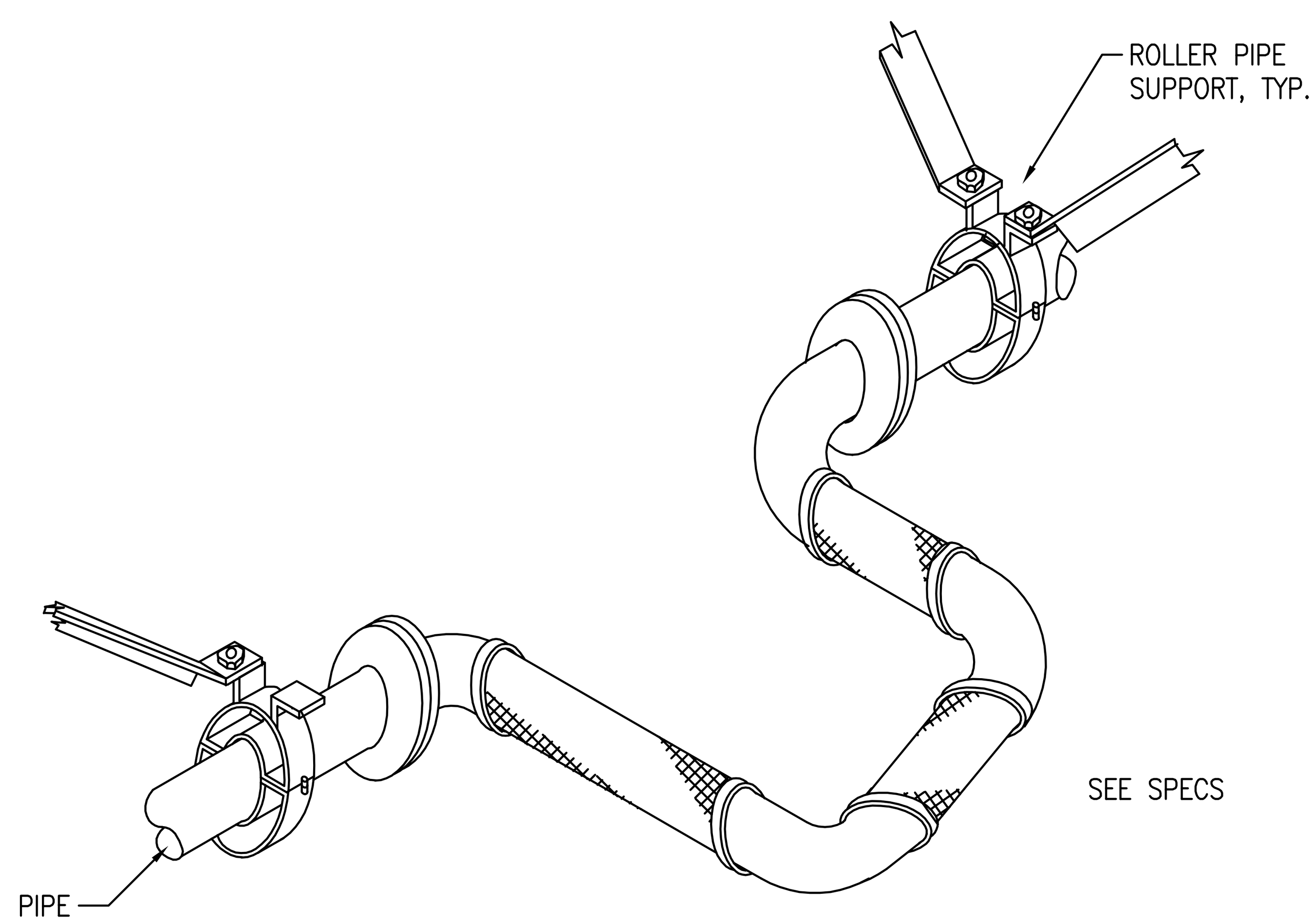
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

NELLIS AFB NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL DETAILS

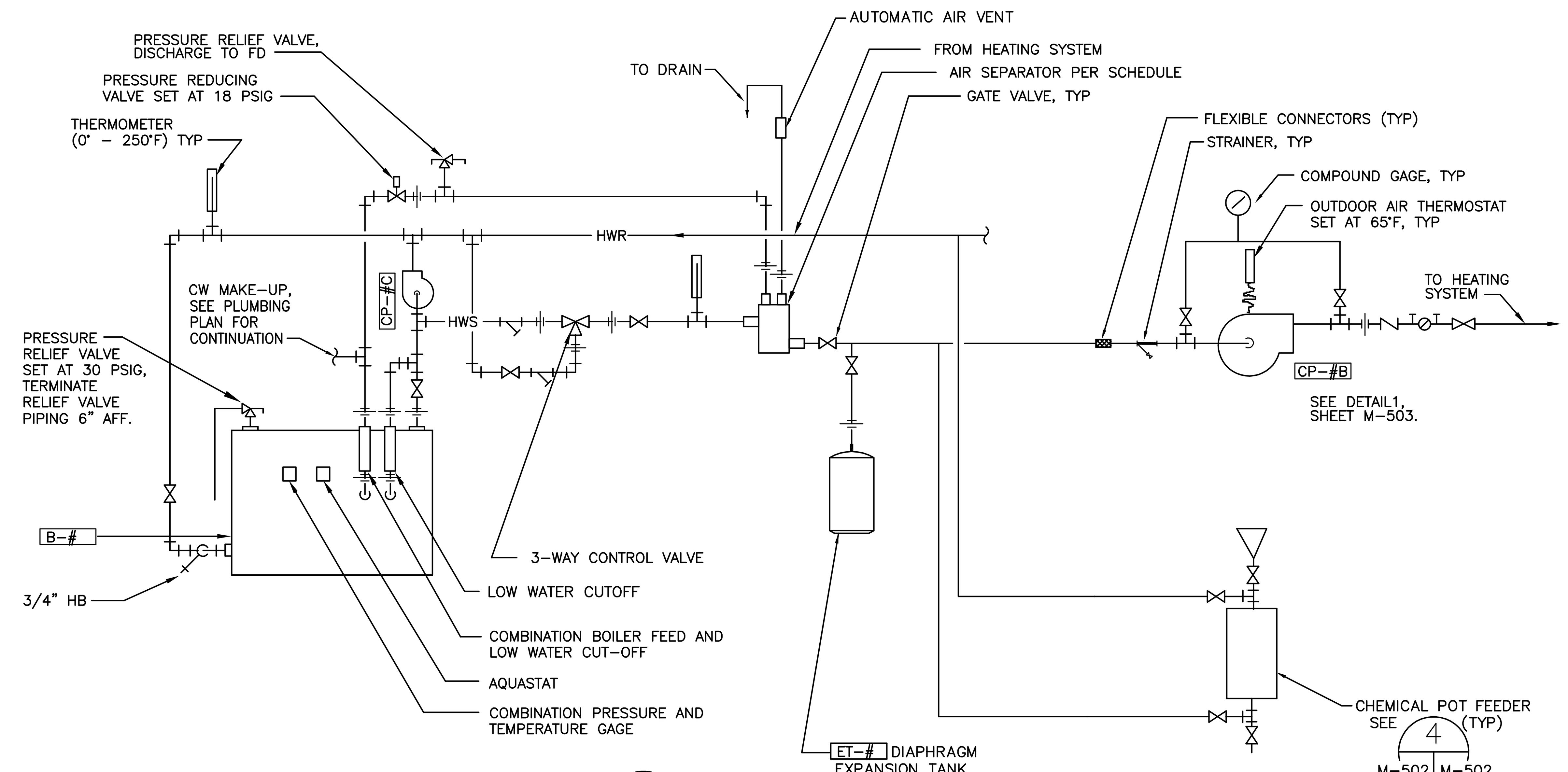
Sheet reference number:
M-501

Border Revised 08/26/04, COESHT02.DWG



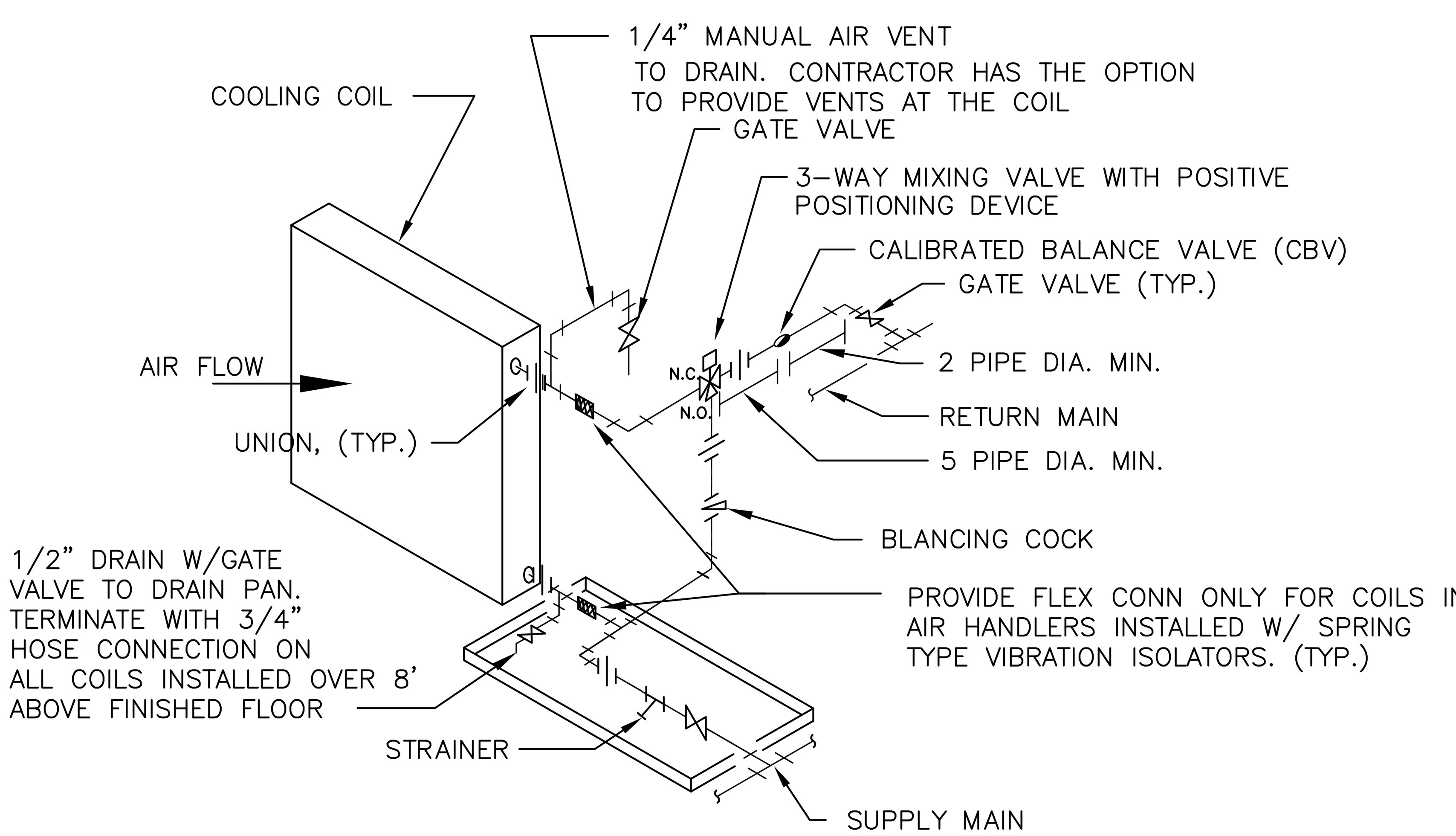
EXPANSION LOOP DETAIL 1 TYP. M-502

SCALE NONE



BOILER PIPING SCHEMATIC 2 TYP. M-502

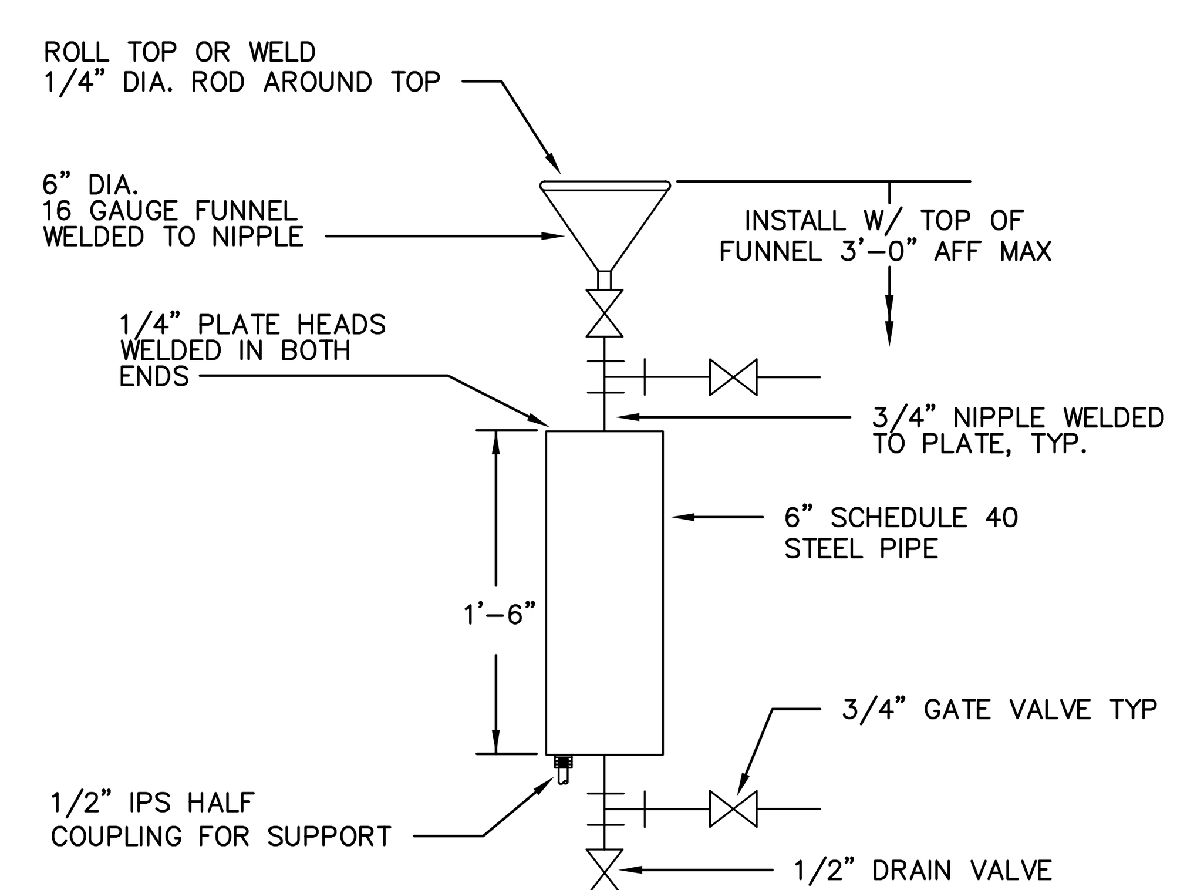
NOT TO SCALE



CHILLED WATER COIL CONNECTION (3-WAY MIXING VALVE) 3 TYP. M-502

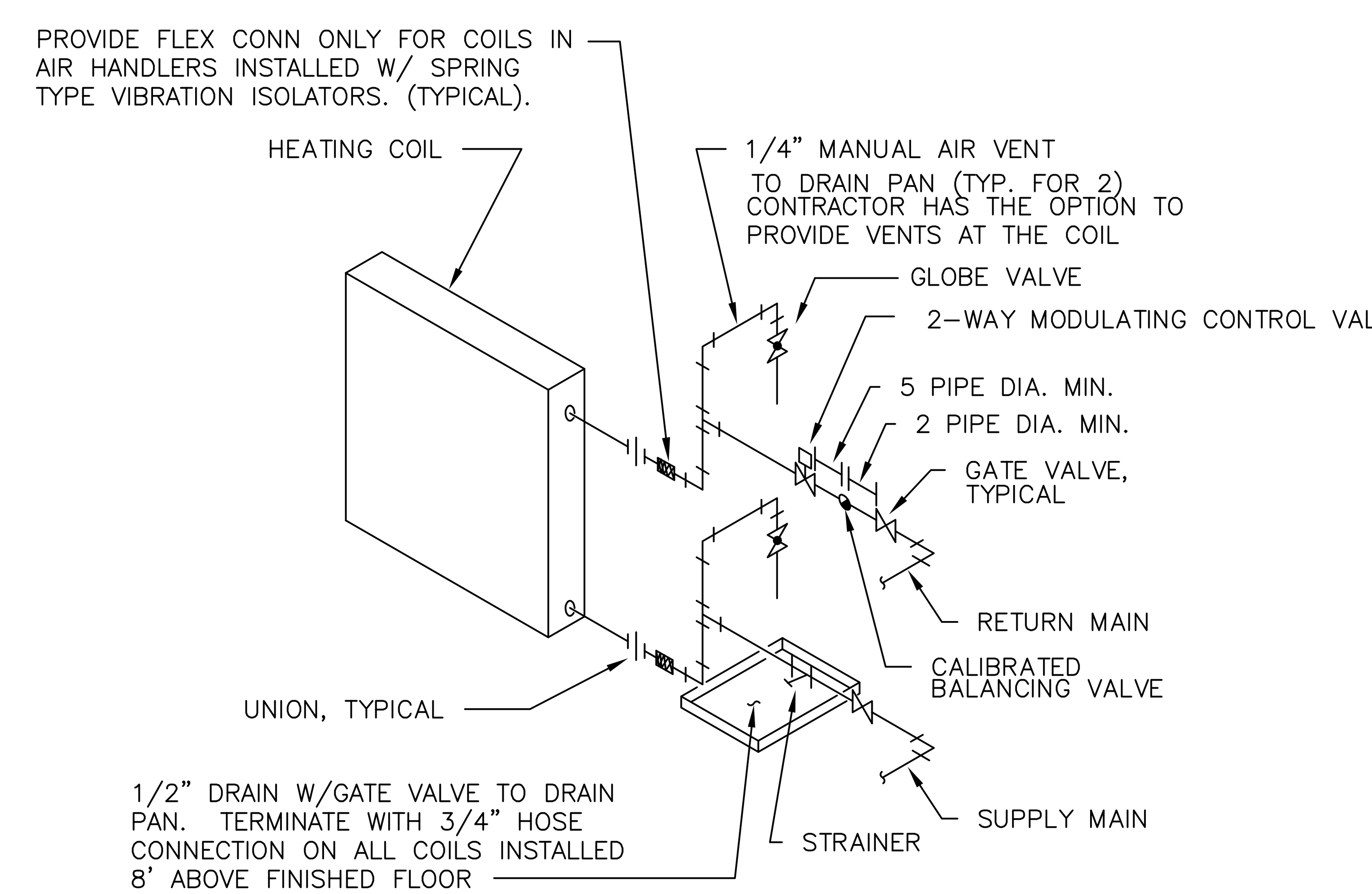
SCALE NONE

NOTE:
A COMMERCIALLY AVAIABLE CHEMICAL POT FEEDER MAY BE SUBSITUTED FOR UNIT SHOWN WHEN APPROVED BY THE CONTRACTING OFFICER.



CHEMICAL POT FEEDER DETAIL 4 MX M-502

SCALE NONE



HOT WATER COIL WITH 2-WAY MIXING VALVE 5 TYP. M-502

SCALE NONE

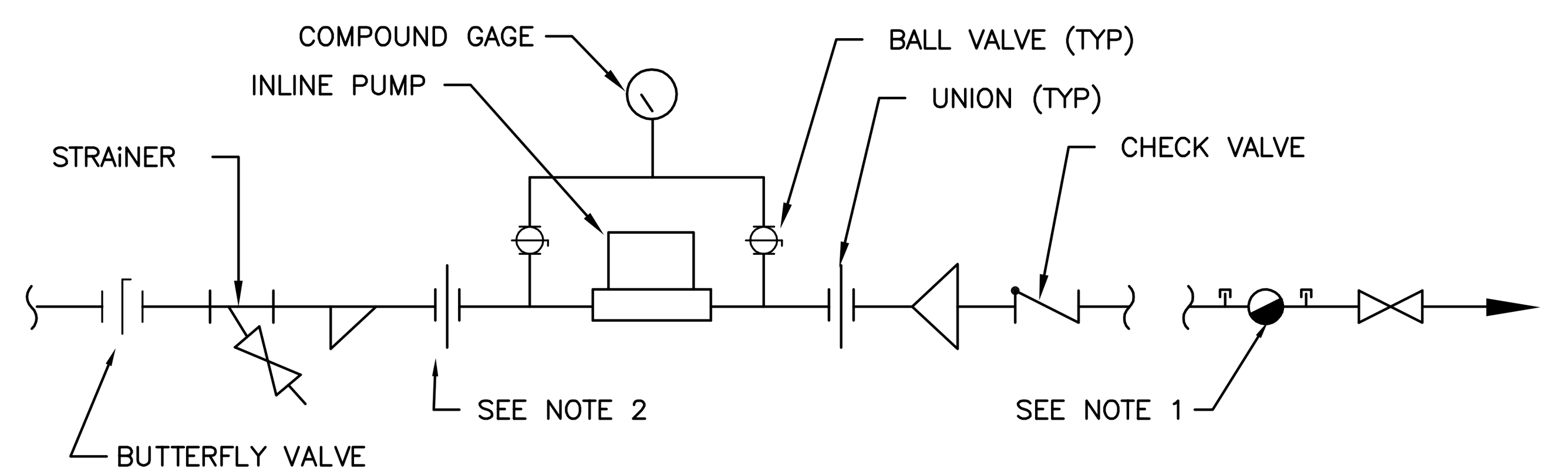
US Army Corps of Engineers Sacramento District

Designed by: A.M. | Date: 10/21/05 | Rev.
Dwn by: A.M. | Spec No.: 1304 | Design file no: 229-25-539
Reviewed by: | Drawing Code:
Submitted by: Chief, Mech/Elec Des. Sec. | File name: | Plot date: | Dwg scale: AS NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA
SACRAMENTO DISTRICT IN-HOUSE DESIGN 1325 J STREET SACRAMENTO, CA 95814-2922

NELLIS AFB NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL DETAILS

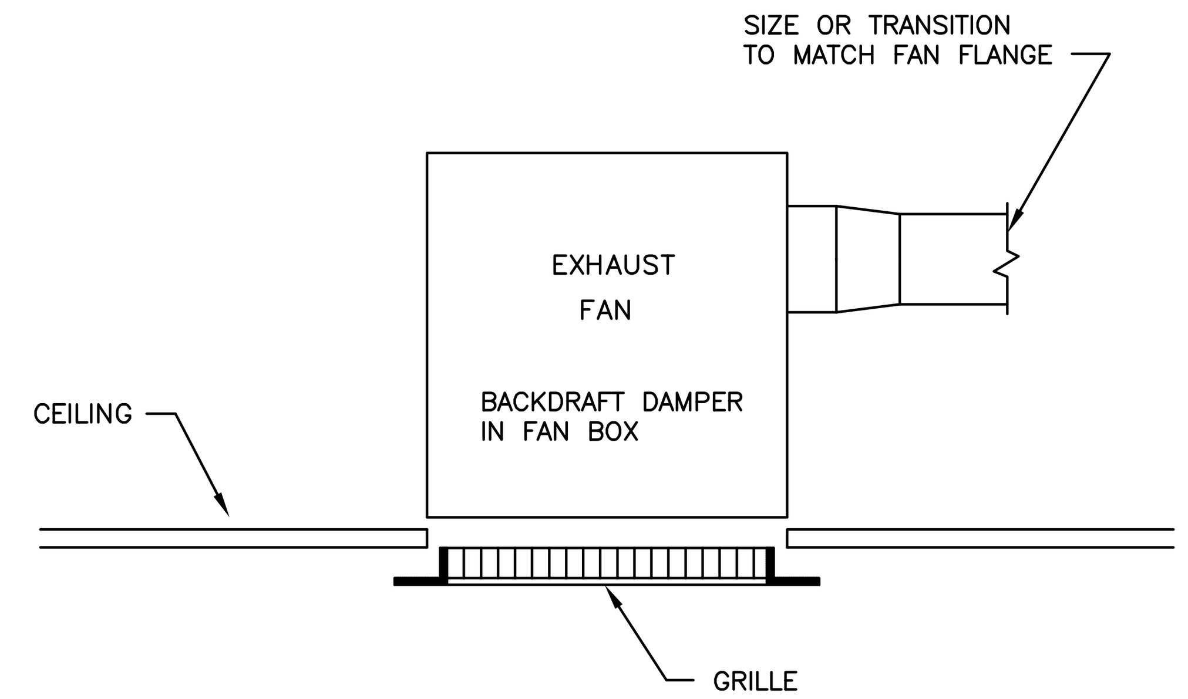
Sheet reference number:
M-502



NOTES
1. CALIBRATED BALANCE VALVE TO BE INSTALLED WITH A MINIMUM DISTANCE OF 5 PIPE DIAMETERS UP STREAM AND 2 PIPE DIAMETERS DOWN STREAM OF ANY FITTING, OR AS RECOMMENDED BY THE MANUF.

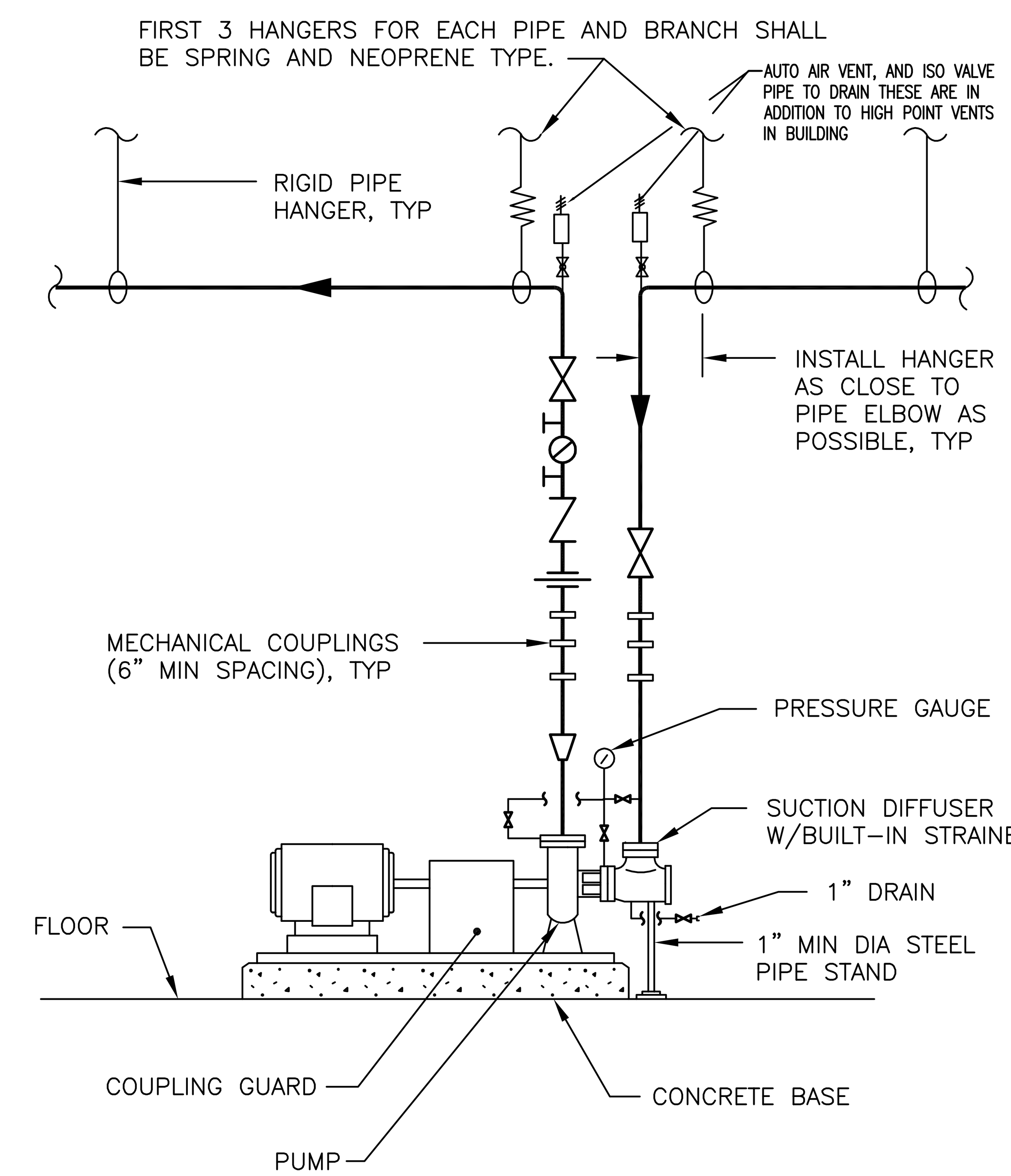
2. PROVIDE UNIONS AT BOTH ENDS OF PUMP IF CONNECTIONS ARE THREADED.

INLINE PUMP INSTALLATION SCHEMATIC (1)
SCALE NONE TYP. M-503

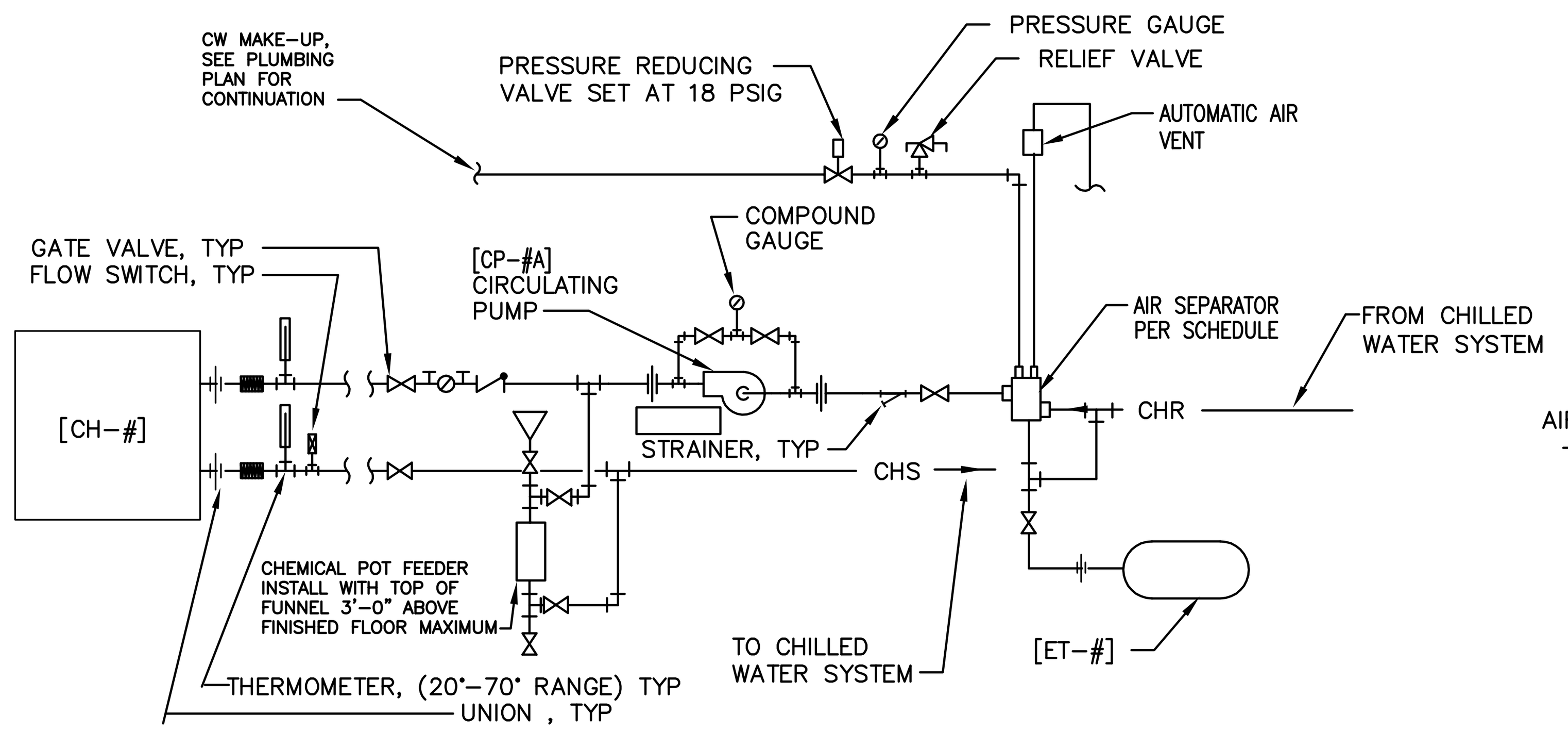


FOR ATTACHMENT, SEE DETAIL 1 SHEET M-505

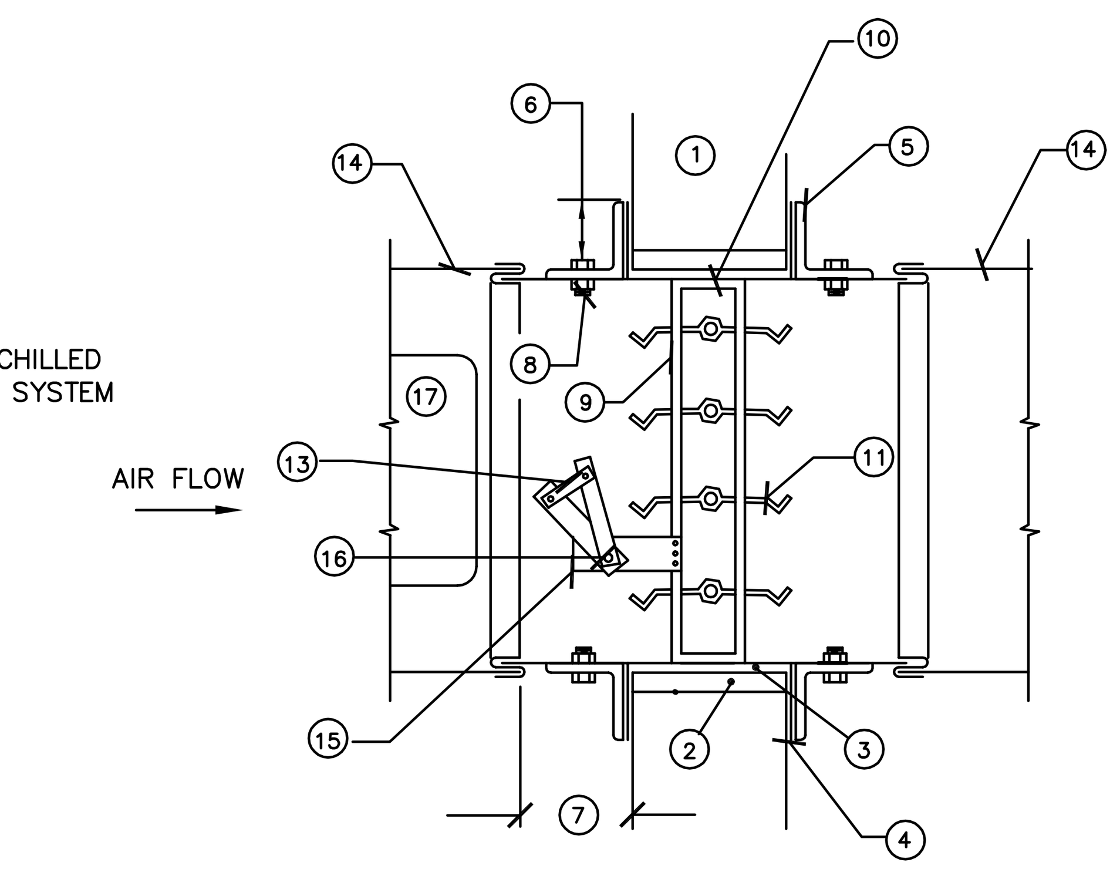
CEILING EXHAUST FAN (2)
SCALE NONE M-104 M-503



FLOOR MOUNTED PUMP DETAIL (3)
SCALE NONE TYP. M-503



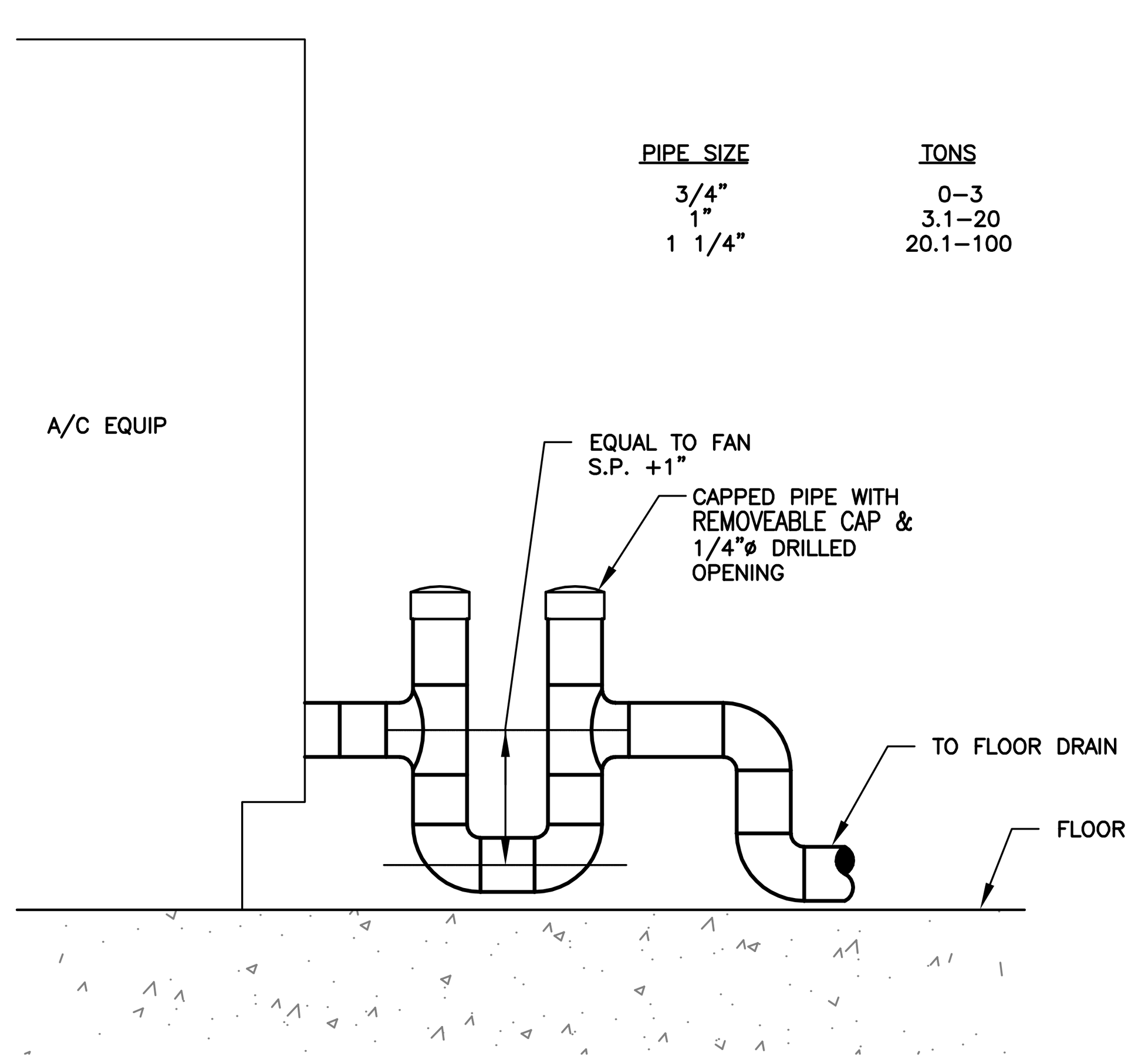
CHILLER PIPING SCHEMATIC (4)
SCALE NONE TYP. M-503



(1)	WALL	(8)	RETAINING ANGLES SECURED TO SLEEVE WITH 1/4" BOLTS OR 1/2" WELDS. MAX SPACING 6" O.C. BEGIN 2" FROM EACH CORNER.
(2)	INTERIOR OF OPENING LINED WITH U.L. LISTED MATERIAL HAVING SAME FIRE RESISTIVE RATING AS WALL.	(9)	FIRE/SMOKE DAMPER U.L. LISTED
(3)	CLEARANCE FOR THERMAL EXPAN- SION 1/8 INCH PER FOOT OF DUCT DIMENSION MAX. 1/2 INCH, HALF FOR EACH SIDE.	(10)	FRIE/SMOKE DAMPER SECURED TO SLEEVE WITH 1/4" BOLTS OR 1/2" WELD, MAX SPACING 12" O.C. BEGIN FROM EACH CORNER.
(4)	STEEL SLEEVE WITH FORMED FLANGE MIN 10 GA 1-1/2 INCH FLANGE FOR DUCT SIZE 0-48 INCHES, AND 2 INCE FLANGE FOR DUCT SZIE 48 INCHES AND LARGER	(11)	FIRE/SMOKE AIRFOIL DAMPER BLADES
		(12)	DELETED
(5)	STEEL RATAINING ALGLES H/2"xH/2"x 12GA FOR DUCTS 0-48" AND 2"x2"x1/8" FOR DUCTS 48" AND LARGER	(13)	FUSIBLE LINK ASSY
		(14)	DUCT
(6)	REGARDLESS OF DUCT SIZE, FLANGES AND RETAINING ANGLES SHALL OVERLAP FRAMEWORD OF PREPARED OPENING BY A MIN OF I"	(15)	U.L. LISTED FUSIBLE LINK
(7)	3 iINCHES MINIMUM	(16)	ELECTRICALLY ACTUATED LEVER ARM
		(17)	ACCESS DOOR

FIRE/SMOKE DAMPER DETAIL (5)
SCALE NONE TYP. M-503

PIPE SIZE	TONS
3/4"	0-3
1"	3.1-20
1 1/4"	20.1-100



CONDENSATE DRAIN (6)
SCALE NONE TYP. M-503

US Army Corps of Engineers Sacramento District

Symbol | Description | Date | Approved

Designed by: A.M. | Dwn by: A.M. | Spec No.: | Reviewed by: 1304 | Submitted by: Chief, Mech/Elec Des. Sec.
Rev. | Date: 10/21/05 | Design file no: | 229-25-539 | Drawing Code: | File name: | Plot date: | Dwg scale: AS NOTED

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

NELLIS AFB NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL DETAILS

Sheet reference number:
M-503

Border Revised 08/30/04, CDESHTD2.DWG


INSERTS PER DETAIL 4 SHEET M-504 OR ATTACHMENT TO JOIST DETAIL 3 SHEET M-504
STEEL OFFSET WALL BRACKET
ROD
TURN-BUCKLE
U-BOLTS
ANGLE
U-BOLT
EYE BOLT
PIPE CLAMP
WELDED STEEL WALL BRACKET
I-BEAM CLAMPS
LOCK NUT
C-CLAMP
ANGLE
ROD
EYE BOLT
WOOD JOIST
CINCH ANCHOR, (TYP)
TURNBUCKLE
6x25 RESTRAINING STRAP
STEEL STRAP
STEEL CLEVIS
THRU-BOLT
STEEL PLATE
ADJUSTABLE PIPE STAND
BLOCK WALL
CINCH ANCHORS
TYPICAL PIPE SUPPORT DETAILS
SCALE NONE
1
TYP. M-504
CONCRETE INSERT PER SPECS.
CONCRETE TOPPING SLAB
SELF DRILLING ANCHOR
STEEL DECKING
LOCKWASHER W/DOUBLE NUTS
USE FULL THREADED RODS
TYPE 1
MAXIMUM LOAD PER MFR. RECOMMENDED RATING.
TYPE 2
INSTALLED AFTER CONCRETE IS POURED. MAX LOAD 50% OF MFR. RECOMMENDED RATING.
THREADED ROD ATTACHMENTS FROM METAL DECK CONCRETE SLAB
SCALE NONE
4
TYP. M-504
NOTE:
FOR EQUIPMENT WEIGHING MORE THAN 100 LBS. CONTRACTOR SHALL SUBMIT SUPPORT DETAILS FOR APPROVAL BY THE CONTRACTING OFFICER PRIOR TO INSTALLATION.
ANGLE W/ ANCHOR BOLT & TWO NUTS
1/16" OVERSIZE HOLE OR IF LARGER USE WASHER AND WELD ALL AROUND (TYP)
FLOOR, ROOF, OR FOUNDATION
"C" EDGE DISTANCE
"B" EMBEDMENT DEPTH
"A" DIA. ANCHOR BOLT OR EXPANSION BOLT (TYP)
EQUIPMENT BASE (TYP)
SHIM PLATE AS REQ'D
NEOPRENE (TYP) PAD.
NOTES
1. DESIGN SEISMIC RESTRAINTS (ANGLES AND BOLTS) TO WITHSTAND 1.0g LATERAL AND VERTICAL LOADS.
2. FOR "A", "B", AND "C" DIMENSIONS, SEE CEGS 13080, SEISMIC PROTECTION FOR MECHANICAL, ELECTRICAL EQUIPMENT.
3. NEOPRENE PAD NOT REQUIRED FOR BOILER.
RESTRAINTS OF RIGIDLY MOUNTED MECHANICAL EQUIPMENT
SCALE NONE
2
TYP. M-504
SELF DRILLING ANCHOR
CONCRETE TOPPING SLAB
STEEL DECKING
FULL THREADED STUD WITH LOCKWASHER AND NUT
SEISMIC ANGLE BRACE, SEE SPECIFICATION FOR SIZE
NOTES:
1) CAST IN PLACE ANCHORS SHALL BE ACCEPTABLE IF APPROVED BY CONTRACTING OFFICER.
2) ANCHOR BOLT INSTALLED AFTER CONCRETE IS POURED. MAX LOAD = 50% OF MFR RECOMMENDED RATING. MIN NET LOAD RATING = 125 LBS. EACH.
SEISMIC BRACE ATTACHMENT FROM METAL DECK WITH CONCRETE SLAB
SEISMIC ANGLE BRACING DETAILS
SCALE NONE
5
TYP. M-504
NOTE: SUSPENSION OF ANGLE IRON FROM OPEN WEB JOIST BOTTOM CORD, MAY BE ACCOMPLISHED BY EITHER USING A U-BOLT OR HEX HEAD BOLT W/STEEL PLATE AS SHOWN.
3/8"ø MIN. U-BOLT W/DOUBLE NUTS AND LOCKWASHER, TYP
OPEN WEB JOIST BOTTOM CORD, TYP
3/8"øMIN. HEX HEAD BOLT W/WIDE DIA WASHER
1/4" STEEL PLATE
ANGLE IRON, 2"x2"x1/4"
LOCKWASHER W/ DOUBLE NUTS
THREADED ROD W/DOUBLE NUTS AND LOCKWASHER AT TOP & BOTTOM OF ANGLE IRON, TYP
3/8"ø MIN U-BOLT W/DOUBLE NUTS AND LOCKWASHER, TYP
3/8"ø MIN. HEX HEAD BOLT W/WIDE DIA WASHER
OPEN WEB JOIST, BOTTOM CORD
3/8"ø BOLT W/DOUBLE NUTS AND LOCKWASHER, TYP
3/8" STEEL PLATE
LOCKWASHER W/ DOUBLE NUTS
∠ 2"x2"x1/4"
SEISMIC BRACE PER SPECIFICATION
CABLE BRACE, SEE DETAIL 1, SHEET M-505 (NOT FOR PIPE ANCHOR)
SEISMIC BRACE ATTACHMENT FROM JOIST
NOTE: ANGLE AND BOLT SIZES ARE MINIMUM. REFER TO CEGS 15070A SEISMIC PROTECTION FOR MECHANICAL EQUIPMENT, TO DETERMINE WHETHER LARGER SIZES MAY BE REQUIRED BASED ON EQUIPMENT WEIGHT.
1/8
TYP
SEISMIC CABLE BRACE, WELD TO TOP OF ADJACENT JOIST SEE DETAIL 1 SHEET M-505
ATTACHMENT TO JOIST
SCALE NONE
3
TYP. M-504
L 1-1/2x 1-1/2 x 1/8 ANGLE BRACE, TYPICAL FOR 4. INSTALL AT 45° ANGLE TO PIPE AND SLOPE UP AT 45° ANGLE, FOR ATTACHMENT SEE
3
M-504 M-504
U-BOLTS
1 1/2"X1 1/2"X1/8" STEEL ANGLE
PIPE ANCHOR DETAIL
SCALE NONE
7
TYP. M-504
US Army Corps of Engineers Sacramento District
Date Approved Description Symbol
Designed by: A.M.
Dwn by: A.M.
Reviewed by: S.B.
Submitted by: Chief, Mech/Elec Des. Sec.
Spec No.: 1304
Date: 10/21/05
Design file no: 229-25-539
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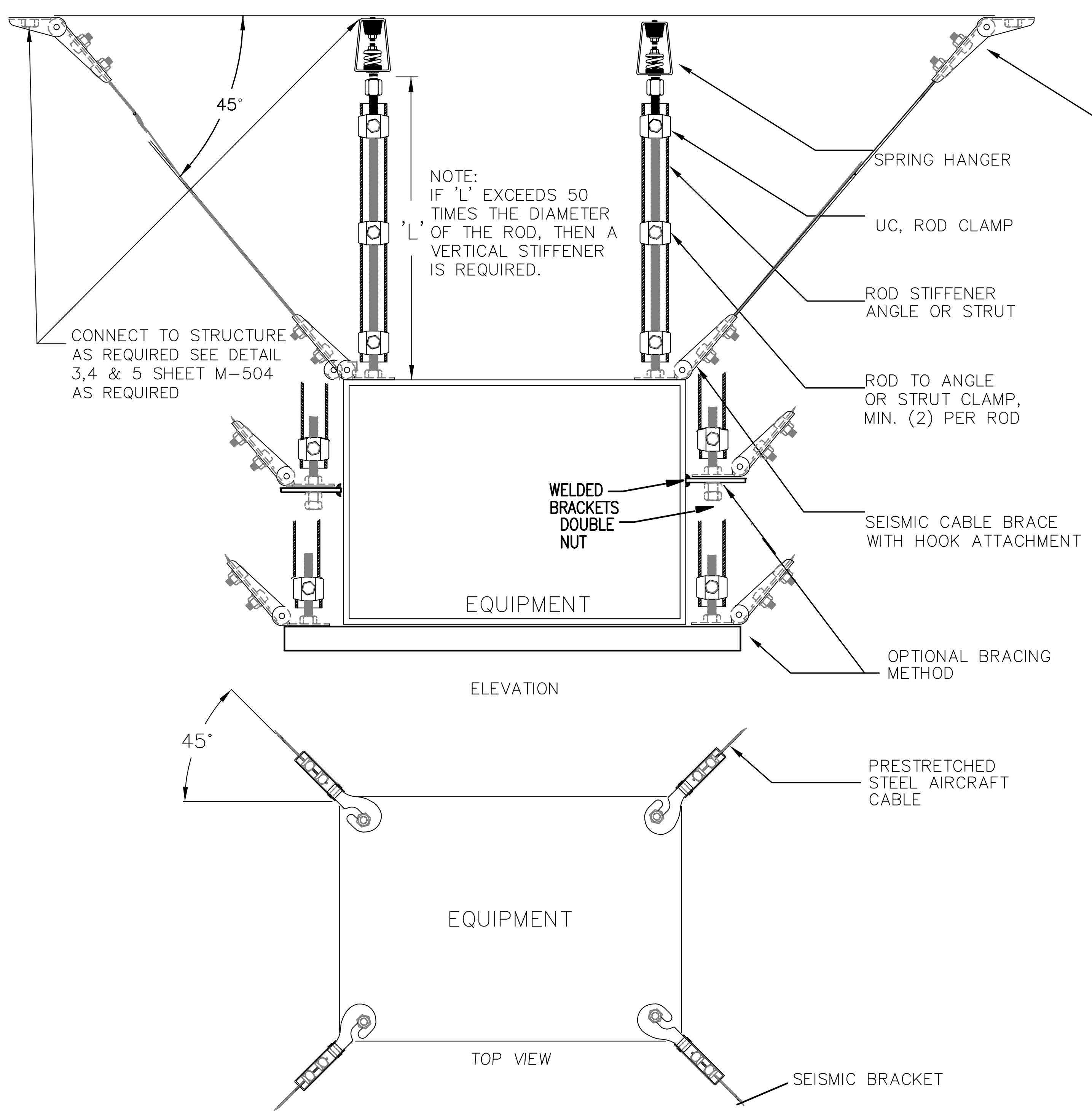
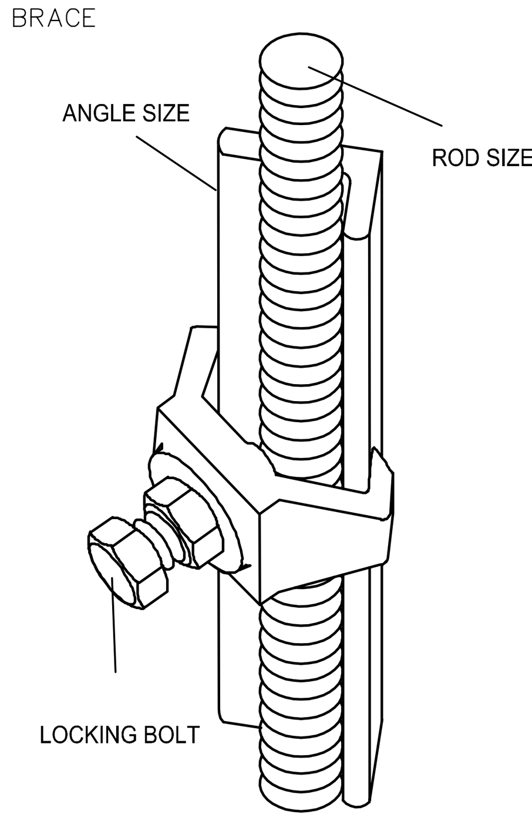
Dwg scale: AS_NOTED
Rev.
DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA
SACRAMENTO DISTRICT IN-HOUSE DESIGN 1325 'J' STREET SACRAMENTO, CA 95814-2922
NELLIS AFB NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL DETAILS
Sheet reference number:
M-504



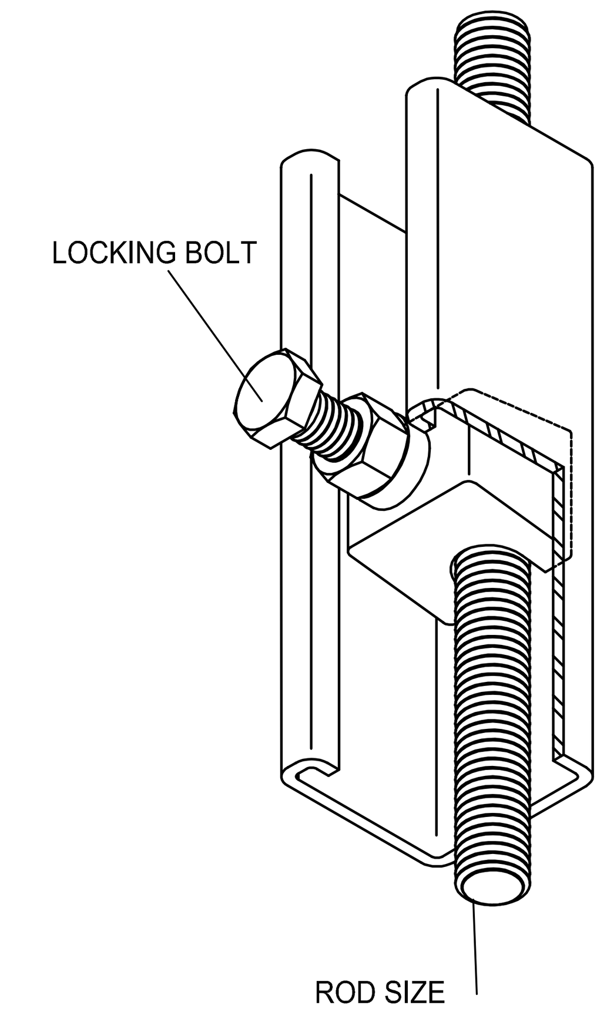
PLATFORM FOR SUSPENDING MECHANICAL EQUIPMENT

SCALE — NONE

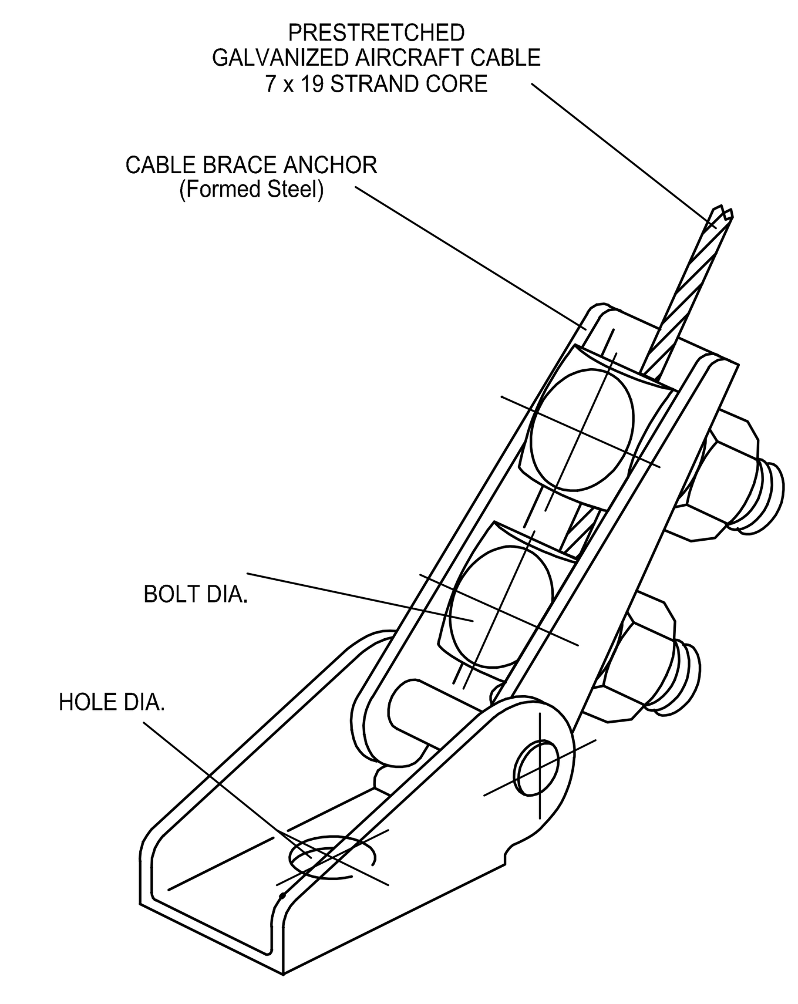
1 TYP. M-505



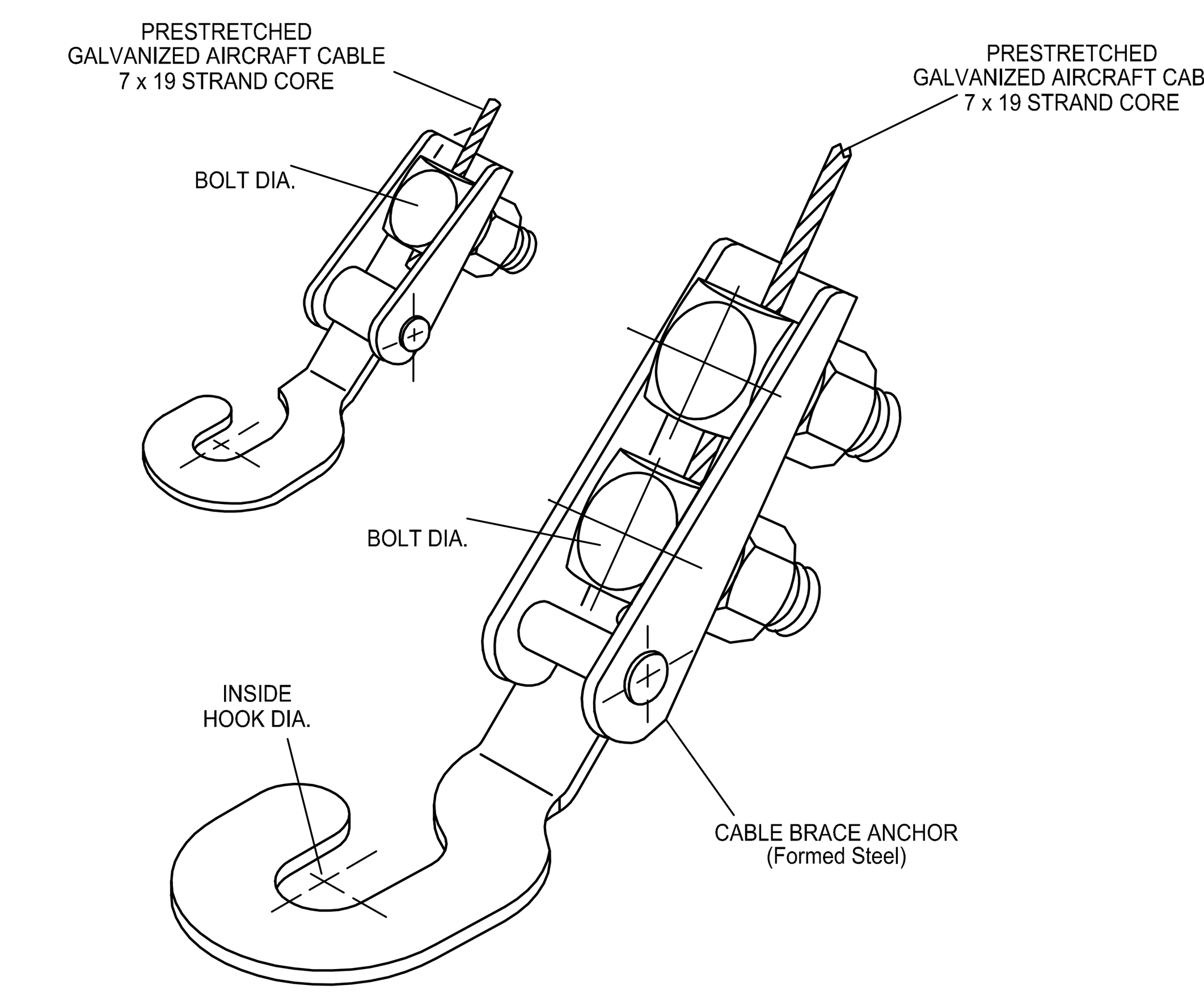
SRC – SEISMIC ROD CLAMP



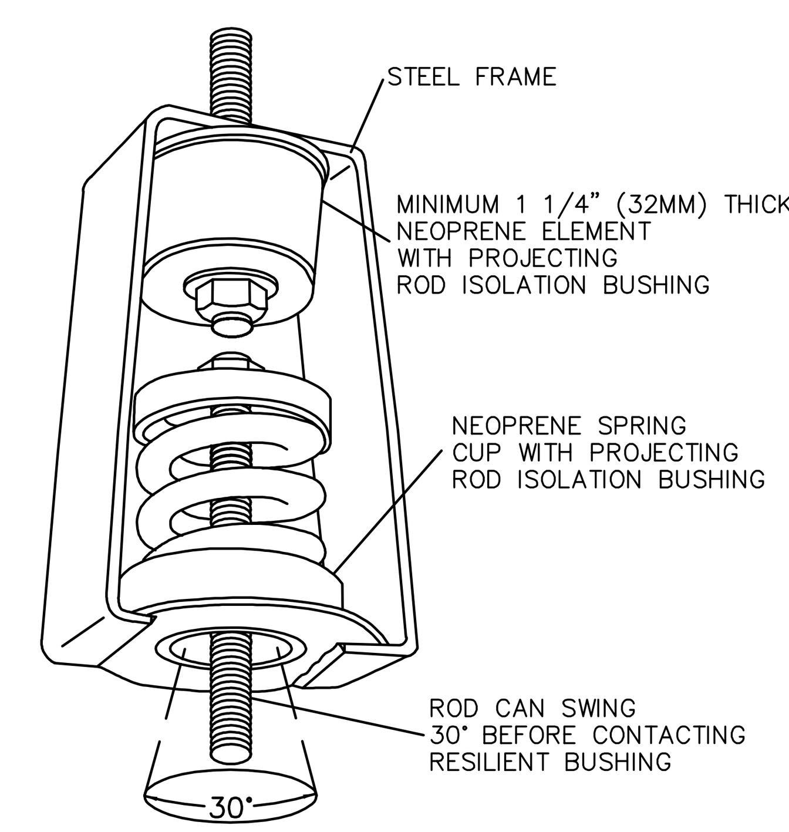
UC – SEISMIC ROD CLAMPS FOR STRUT CHANNELS



SCB – SEISMIC CABLE BRACE



SCBH – SEISMIC CABLE BRACE WITH HOOK ATTACHMENT



SPRING AND NEOPRENE HANGER

Note:

Seismic sway braces shall consist of galvanized steel aircraft cables. Cables braces shall be designed to resist seismic tension loads with a minimum safety factor of 2. Brace end connections shall be steel assemblies that swivel to the final installation angle. Steel angles or struts, when required, shall be clamped to the threaded hanger rods at the seismic sway brace locations utilizing a minimum of two ductile iron clamps. Design incorporating brace assemblies, spring hangers, rod clamps, and cable brace assemblies, rod clamps shall be stamped by a licensed Civil or Structural Engineer.

Install seismic cable brace to that it is not tight. Vibration isolator will not work if seismic cable brace is tight.

US Army Corps of Engineers
Sacramento District

Designed by: A.M. | Date: 10/21/05 | Rev.
Dwn by: A.M. | Spec No.: 1304 | Design file no: 229-25-539
Reviewed by: S.B. | Drawing Code:
Submitted by: | File name: | Plot date: | Dwg scale: AS NOTED

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

NELLIS AFB NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL DETAILS

Sheet reference number:
M-505

MECHANICAL EQUIPMENT SCHEDULES, LEGEND & NOTES

SYMBOL	ABBR	DESCRIPTION	SYMBOL	ABBR	DESCRIPTION	SYMBOL	ABBR	DESCRIPTION
		ARROW INDICATES DIRECTION OF FLOW			RETURN & EXHAUST AIR FLOW		EWT	ENTERING WATER TEMPERATURE
	ATU	AIR TERMINAL UNIT			SUPPLY AIR FLOW		PD	PRESSURE DROP
		AUTOMATIC CONTROL VALVE 2-WAY			TEE DOWN		CFM	CUBIC FEET PER SECOND
		AUTOMATIC CONTROL VALVE 3-WAY			TEE UP		HP	HORSE POWER
	AGV	ANGLE GATE VALVE			THERMOMETER IN WELL		TYP	TYPICAL
	BC	BALANCING COCK	T		THERMOSTAT		EXT	EXTERNAL
	BV	BALL VALVE			TURNING VANES		MD	MOTORIZED DAMPER (CONTROLS)
HWS		HEATING WATER SUPPLY	VD	VD	VOLUME DAMPER WITH MANUAL LOCKING QUADRANT		GAL	GALLONS
HWR		HEATING WATER RETURN		VFD	VARIABLE FREQUENCY DRIVE		S	SECOND
	CkV	CHECK VALVE			VOLUME DAMPER		AF,FC,BI	AIRFOIL, FORWARD-CURVE, BACKWARD-INCLINED
CHWS		CHILLED WATER SUPPLY			RELIEF VALVE (R) OR SAFETY VALVE (S)		FT	FOOT
CHWR		CHILLED WATER RETURN	D		DRAIN PIPING		LBS	WEIGHT, POUNDS
		COMBINATION SHUT-OFF AND CALIBRATED FLOW CONTROL VALVE		PRV	PRESSURE REDUCING VALVE		PRESS,PSI	PRESSURE, LBS PER SQUARE INCH
	CBV	CALIBRATED BALANCING VALVE WITH PRESSURE GAUGE CONNECTIONS			PIPE DOWN		WB	WET BULB TEMPERATURE
20/12		CROSS SECTION OF SUPPLY DUCT			PIPE UP		SEER	SEASONAL ENERGY EFFICIENCY RATING
		CROSS SECTION OF ROUND DUCT		PG	PRESSURE GAGE		W/	WITH
20/12		CROSS SECTION OF EXHAUST OR RETURN AIR DUCT	CW	CW	COLD WATER		MFR	MANUFACTURER
		CEILING DIFFUSER, RECTANGULAR OR SQUARE, 2-,3-, 4-WAY, CORNER BLOW, CFM, & NECK SIZE	HWS		HOT WATER SUPPLY		SPECS	SPECIFICATIONS
DL	DL	DOOR LOUVER	HWR		HOT WATER RETURN		(N)	NEW
UC	UC	UNDERCUT		Cv	VALVE COEFFICIENT		(E)	EXISTING
	AL	DUCT WITH ACOUSTIC LINING		DB	DRY BULB TEMPERATURE		SP	STATIC PRESSURE
l e		EXTRACTOR (AIR DEFLECTOR)		DIA	DIAMETER		FT/S	FOOT PER SECOND
FD		FIRE DAMPER		TEMP	TEMPERTURE		MIN, MAX	MINIMUM, MAXIMUM
	FLX	FLEXIBLE DUCT		DN	DOWN		NC	NORMALLY CLOSED
	FC	FLEXIBLE PIPE CONNECTION		EA	EXHAUST AIR		NO	NORMALLY OPEN, NUMBER
	GV	GATE VALVE		RG, SR	RETURN AIR GRILL, SUPPLY REGISTER		OA	OUTSIDE AIR
	MD	MOTORIZED DAMPER		ER, RR	EXHAUST AIR REGISTER, RETRURN AIR REGISTER		BHP	BRAKE HORSE POWER
[B-1]		INDICATES EQUIPMENT LISTED IN EQUIPMENT SCHEDULE		FD/SD	COMBINATION FIRE/SMOKE DAMPER		VP	VELOCITY PROBE (CONTROLS)
				COP	COEFICIENT OF PERFORMANCE		VF	VARIABLE FREQUENCY

DUCT FITTINGS

SINGLE LINE	DOUBLE LINE ROUND DUCT	DOUBLE LINE RECTANGULAR DUCT	DESCRIPTION
OR	OR	W/ SHORT RADIUS VANES	90° ELBOW
	OR		45° ELBOW
		N/A	45° LATERAL
		N/A	90° TEE W/ OVAL TO ROUND TAP FOR ROUND DUCT
		N/A	90° CONICAL TEE FOR ROUND DUCT
		N/A	90° TEE WITH 45° ENTRY FOR RECTANGULAR DUCT
		N/A	CONNECTION BETWEEN RIGID AND FLEXIBLE DUCT
	45°	N/A	WYE (ANGLE SHALL BE 45° UNLESS OTHER-WISE SHOWN)
			ACOUSTICALLY LINED DUCT
			SQUARE TO ROUND TRANSITION
	N/A	W/ TURNING VANES	90° ELBOW
	N/A	W/ TURNING VANES	TEE
		N/A	LATERAL CROSS

GENERAL NOTES: APPLY TO ALL MECHANICAL SHEETS

1. NEW DUCTWORK FROM THE DISCHARGE OF [AHU-1,2,3&5] TO THE INLET OF TERMINAL UNITS SHALL BE CONSTRUCTED FOR A POSITIVE PRESSURE OF 2 INCHES WATER GAUGE, EXCEPT IN EACH MECH ROOM, PROVIDE CONSTRUCTION FOR 3-INCH POSITIVE PRESSURE. & FROM [AHU-4] CONSTRUCT FOR A POSITIVE PRESSURE OF 2 INCHES WATER GAUGE. RETURN DUCTWORK TO [AHU-1,2,3,4 & 5] SHALL BE CONSTRUCTED FOR A NEGATIVE PRESURE OF 2.0 INCHES OF WATER GAUGE THE REMAINDER OF THE DUCTWORK SHALL BE CONSTRUCTED FOR A POSTIVE PRESSURE OR NEGATIVE PRESSURE OF 1.0 INCH WATER GAUGE AS APPLICABLE OR UNLESS STATED OTHERWISE.

2. PROVIDE A MINIMUM OF 3 FEET AND A MAXIMUM OF 10 FEET OF PREINSULATED FLEXIBLE DUCT AT CONNECTIONS TO SUPPLY DIFFUSERS. FLEXIBLE DUCT SHALL NOT BE PULLED TIGHT AROUND CORNERS & HAVE A SPUN NYLON (NOT POLYETHYENE) LINER.

3. THERMOSTATS SHALL BE SET FOR 76°F FOR COOLING, 70° FOR HEATING, UNLESS INDICATED OTHERWISE.

4. ALL DIFFUSERS SHALL BE 4-WAY, UNLESS INDICATED OTHEWISE WHEN RECTANGULAR DIFFUSERS ARE INDICATED, SELECT THROW TO MATCH ROOM GEOMETRY.

5. SEE "DUCT FITTING LEGEND" FOR DESCRIPTION OF DUCTWORK & FITTINGS.

6. CONTRACTOR IS RESPONSIBLE TO ENCLOSE, WITH LIKE MATERIAL, ANY FLOOR ROOF OR WALL OPENINGS REMAINING FROM PERMANENT REMOVAL OR RELOCATION OF ANY EXISTING PIPING OR DUCTWORK. METHOD OF ENCLOSURE SUBJECT TO APPROVAL BY CONTRACTING OFFICER.

7. ALL VENTS, DUCTS, AND SIMILAR OPENINGS IN EXCESS OF 96 SQUARE INCHES THAT ENTER OR PASS THROUGH A SCIF MUST BE PROTECTED WITH EITHER BARS, OR GRILLS, OR COMMERCIAL METAL DUCT SOUND BAFFLES THAT MEET APPROPRIATE SOUND ATTENUATION CLASS AS SPECIFIED IN ANNEX E PER DIRECTOR OF CENTRAL INTELLIGENCE DIRECTIVE NO. 6/9. WITHIN THE UNITED STATES, BARS OR GRILLS ARE NOT REQUIRED IF AN IDS IS USED. IF ONE DIMENSION OF THE DUCT MEASURES LESS THAN SIX INCHES, OR DUCT IS LESS THAN 96 SQUARE INCHES, BARS ARE NOT REQUIRED; HOWEVER, ALL DUCTS MUST BE TREATED TO PROVIDE SUFFICIENT SOUND ATTENUATION. IF BARS ARE USED, THEY MUST BE 1/2 INCH DIAMETER STEEL WELDED VERTICALLY AND HORIZONTALLY SIX (6) INCHES ON CENTER; IF GRILLS ARE USED, THEY MUST BE OF 9-GAUGE EXPANDED STEEL; IF COMMERICAL SOUND BAFFLES ARE USED, THE BAFFLES OR WAVE FORMS MUST BE METAL PERMANENTLY INSTALLED AND NO FARTHER APART THAN SIX (6) INCHES IN ONE DIMENSION. A DEVIATION OF 1/2 INCH IN VERTICAL AND/OR HORIZONTAL SPACING IS PERMISSIBLE. SEE SHEET A-130, A-131 FOR LOCATIONS.

8. ALLOW REQUIRED SPACE FOR CABLE TRAYS SEE TELECOMMUNICATION SHEETS.

9. CONTRACTOR TO ASSUME ONE FITTING OR OFFSET ON AVERAGE PER 15 FOOT OF DUCT RUN TO ACCOMODATE BUILDNG CONDITIONS IN EXISTING BLDG. 282.

10. EXTEND BOILER STACK LOCATED ON THE ROOF PER NFPA & MANUFACTURES RECOMMEND.

11. FOR ALL FAN COIL UNIT PROVIDE CONDENSATE PUMP & PROVIDE 1/2" PIPE TO DAY LIGHT UNLESS A FLOOR DRAIN IS AVAILABLE.

12. FOR CONDENSATE DRAIN FOR AHU'S, SEE DETAIL 6 ON SHEET M-503.

13. SEE DETAILS 5 ON SHEET M-503 FOR TYPICAL FIRE/SMOKE DAMPER DETAILS.

14. REFRIGERANT LIQUID AND SUCTION LINES SHALL BE SIZED PER MANUFACTURERS RECOMMENDATIONS.

15. SEE 3 / TYP. M-501 FOR TYPICAL AIR TERMINAL UNIT (ATU) MOUNTING DETAIL. (FOR EACH SUPPLY DIFFUSER PROVIDE A BALANCING DAMPER NEAR ATU).

16. SEE 1 / TYP. M-504 FOR TYPICAL PIPE SUPPORT DETAILS.

17. SEE 1 / TYP. M-505 FOR TYPICAL PLATFORM FOR SUSPENDING MECHANICAL EQUIPMENT.

18. FOR EACH RETURN GRILL IN BUILDING 282, PROVIDE A BALANCING DAMPER IN DUCT.

US Army Corps of Engineers
Sacramento District

Approved
Date:
Description
Symbol

Rev
Date: 10/21/05
Design file no: 229-25-539
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Spec No.: 1304
Designed by: A.M.
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NEVADA

NELLIS AFB

F/A-22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL LEGEND AND ABBREVIATIONS

Sheet reference number:
M-601

Border Revised 08/30/04, CDSHEETS.DWG

MECHANICAL EQUIPMENT SCHEDULES

AIR HANDLING UNIT, FACTORY FABRICATED

SYMBOL	SUPPLY FAN									SERVICE	HEATING COIL SYMBOL	COOLING COIL SYMBOL	ELECTRICAL CHARACTERISTRICS			MAXIMUM OPERATING WT LBS	FILTER SYMBOL	MINIMUM OUTSIDE AIR CFM	REMARKS
	MINIMUM AIR FLOW CFM	TOTAL STATIC PRESSURE IN WC	EXTERNAL STATIC PRESSURE IN WC	FAN TYPE	NUMBER AND MIN SIZE OF WHEELS	MAX RPM	MIN MOTOR HP	MAX BRAKE HP	TYPE OF DRIVE				VOLTAGE	PHASE	HERTZ				
[AHU-1]	33700	6.27	3.00	AF	1-32"	1471	50	49.00	BELT	INDOOR	N/A	[CC-1]	200	3	60	N/A	PF-1/F-1	14460	VF DRIVE, INTERNALLY SEISMICALLY SPRING ISOLATION RM 1078
[AHU-2]	23100	5.47	2.75	FC	1-30.25"	834	40	37.50	BELT	INDOOR	N/A	[CC-2]	200	3	60	N/A	PF-2/F-2	8800	VF DRIVE, INTERNALLY SEISMICALLY SPRING ISOLATION RM 1143
[AHU-3]	14000	5.96	3.00	AF	1-22"	2088	25	22.5	BELT	INDOOR	N/A	[CC-3]	200	3	60	N/A	PF-3/F-3	4200	VF DRIVE, INTERNALLY SEISMICALLY SPRING ISOLATION RM 1251
[AHU-4]	7800	4.88	2.00	AF	1-20"	1845	10	9.00	BELT	INDOOR	[HC-4]	[CC-4]	200	3	60	N/A	PF-4/F-4	7800	INTERNALLY SEISMICALLY SPRING ISOLATION RM 2235
[AHU-5]	14550	6.20	3.00	AF	1-22"	2146	25	24.5	BELT	INDOOR	N/A	[CC-5]	200	3	60	N/A	PF-5/F-5	3040	VF DRIVE, INTERNALLY SEISMICALLY SPRING ISOLATION RM 1251

AIR FILTER, EXTENDED SURFACE NON-SUPPORTED, POCKET CONFIGURATION

SYMBOL	TOTAL FILTER BANK CFM	NOMINAL SIZE OF EACH FILTER, HEIGHT BY WIDTH BY DEPTH INCHES	MINIMUM NUMBER OF FILTERS	MINIMUM AVERAGE EFFICIENCY %, BASED ON ASHRAE STD. 52-76	MAXIMUM MID-LIFE RESISTANCE IN WC	FINAL RESISTANCE IN WC	REMARKS
[F-1]	33700	24X24X18	8	95	0.94	1.25	
		24X20X18	2	95	0.94	1.25	
		24X12X18	8	95	0.94	1.25	
[F-2]	23100	24X24X18	4	95	0.85	1.48	
		24X20X18	8	95	0.85	1.48	
		20X20X18	2	95	0.85	1.48	
		20X24X18	1	95	0.85	1.48	
[F-3]	14000	24X24X18	6	95	0.92	1.25	
[F-4]	7800	24X24X18	2	95	0.88	1.25	
		24X12X18	2	95	0.88	1.25	
		24X20X18	1	95	0.88	1.25	
[F-5]	14550	24X24X18	6	95	0.95	1.25	

AIR FILTER, SECTIONAL, PLEATED PANEL, EXTENDED SURFACE

SYMBOL	TOTAL FILTER BANK CFM	MAXIMUM FACE VELOCITY, FPM	THICKNESS INCHES	MAX INITIAL RESISTANCE IN WC	FINAL RESISTANCE IN WC	TYPE	REMARKS
[PF-1]	33700	350	2	0.55	0.75	ANGLE	25% ASHRAE 52-76 RATED
[PF-2]	23100	290	2	0.54	0.75	ANGLE	25% ASHRAE 52-76 RATED
[PF-3]	14000	360	2	0.56	0.75	ANGLE	25% ASHRAE 52-76 RATED
[PF-4]	7800	300	2	0.54	0.75	ANGLE	25% ASHRAE 52-76 RATED
[PF-5]	14550	375	2	0.56	0.75	ANGLE	25% ASHRAE 52-76 RATED

AUTOMATIC VALVES FOR TEMPERATURE CONTROL SYSTEM(S)

SYMBOL	SERVICE	FLOW	MAX PD (PSIG)	ACTION	PORTING TO CONTROLLED DEVICE	TYPE	REMARKS
[CV-1]	CHILLED WATER	282.8	5	MODULATING	NORMALLY CLOSED	3-WAY	PROVIDE 50 PSIG MIN CLOSE OFF RATING, AHU-1
[CV-2]	CHILLED WATER	196.0	5	MODULATING	NORMALLY CLOSED	3-WAY	PROVIDE 50 PSIG MIN CLOSE OFF RATING, AHU-2
[CV-3]	CHILLED WATER	101.2	5	MODULATING	NORMALLY CLOSED	3-WAY	PROVIDE 50 PSIG MIN CLOSE OFF RATING, AHU-3
[CV-4A]	CHILLED WATER	86.4	5	MODULATING	NORMALLY CLOSED	3-WAY	PROVIDE 50 PSIG MIN CLOSE OFF RATING, AHU-4
[CV-4B]	HOT WATER	49.9	5	MODULATING	NORMALLY OPEN	3-WAY	PROVIDE 50 PSIG MIN CLOSE OFF RATING, AHU-4
[CV-5]	CHILLED WATER	90.5	5	MODULATING	NORMALLY CLOSED	3-WAY	PROVIDE 50 PSIG MIN CLOSE OFF RATING, AHU-5
[CV-6]	HOT WATER	54.0	2	MODULATING	NORMALLY OPEN	3-WAY	PROVIDE 50 PSIG MIN CLOSE OFF RATING, B-1
[CV-7]	HOT WATER	38.0	2	MODULATING	NORMALLY OPEN	3-WAY	PROVIDE 50 PSIG MIN CLOSE OFF RATING, B-2
[CV-8]	HOT WATER	92.0	2	MODULATING	NORMALLY OPEN	3-WAY	PROVIDE 50 PSIG MIN CLOSE OFF RATING, B-3

BOILER, HOT WATER, GAS FIRED

SYMBOL	MINIMUM OUTPUT CAPACITY BTUH	MINIMUM THERMAL EFFICIENCY %	WATER FLOW GPM	INLET WATER TEMP F	OUTLET WATER TEMP F	TYPE OF GAS	ELECTRICAL				REMARKS
							NOMINAL MOTOR HP	VOLTAGE	PHASE	HERTZ	
[B-1]	818000	80	54.0	150	180	Natural	1/3	115	1	60	MOTOR HP REFERS TO FAN ON FORCED DRAFT UNITS. PROVIDE CONTACT TO ENERGIZE [CP-#B] WHEN BURNER FIRES. PROVIDE: [B-1] OFF-ON CONTROLS [B-2] OFF-ON CONTROLS [B-3] 2-STAGE CONTROLS
[B-2]	662000	80	38.0	150	180	Natural	1/3	115	1	60	
[B-3]	1271000	80	92.0	150	180	Natural	1/2	115	1	60	

FAN COIL UNIT, DX COOLING

SYMBOL	CONFIGURATION	SUPPLY FAN						COOLING COIL, DIRECT-EXPANSION						MAXIMUM OPERATING WT LBS	MAX SOUND POWER LEVELS	FILTERS	LOCATION ROOM	REMARKS
		MINIMUM AIR FLOW CFM	EXTERNAL STATIC PRESSURE IN WC	MOTOR				MIN CAPACITY TOTAL BTUH	MIN CAPACITY SENSIBLE BTUH	ENTERING AIR TEMP ° F		LEAVING AIR TEMP ° F	MAX AIR PRESSURE DROP IN WC	MAX FACE VELOCITY FPM				
				NOMINAL WATTS	VOLTAGE	PHASE	HERTZ			DB	WB	DB						
FC-1	DUCT FREE HIGH WALL	200	0	34	115	1	60	8,480	5,410	80	67	54.5	—	—	20			NOTE: LEAVING DRY BULB TEMPERATURE ARE APPROXIMATE AND ARE LISTED FOR INFORMATION ONLY PROVIDE LOW AMBIENT PACK
FC-2	DUCT FREE HIGH WALL	450	0	49	200	1	60	23,000	14,800	80	67	50.3	—	—	50			

GENERAL NOTE:

EQUIPMENT SHALL MEET THE PEFORMANCE REQUIREMENTS LISTED IN THE EQUIPMENT SCHEDULE AT A SITE ELEVATION OF 1868 FEET ABOVE SEA LEVEL.

US Army Corps of Engineers
Sacramento District

Approved
Date:
Description
Symbol

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Chief, Mech/Elec. Sec.

DEPARTMENT OF THE ARMY
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SACRAMENTO, CALIFORNIA

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NEVADA
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F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL SCHEDULES

Sheet reference number:
M-602

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FANS

SYMBOL	MINIMUM AIR FLOW CFM	TOTAL STATIC PRESSURE INCHES WC	UNIT TYPE	FAN TYPE	DRIVE	NUMBER AND MIN DIA OF WHEELS(S) IN	FAN MAX BHP	FAN MOTOR MIN HP	FAN MOTOR VOLTAGE	FAN MOTOR PHASE	FAN MOTOR HERTZ	REMARKS
[RF-1]	33700	2.75	CENTRIFUGAL TUBULAR	AF	BELT	1-36	37.6	40.0	200	3	60	RM 1078
[RF-2]	23100	2.5	CENTRIFUGAL TUBULAR	AF	BELT	1-33	20.5	25.0	200	3	60	RM 1143
[RF-3]	14000	2.00	CENTRIFUGAL TUBULAR	AF	BELT	1-24	13.9	15.0	200	3	60	RM 2235
[RF-5]	14550	2.00	CENTRIFUGAL TUBULAR	AF	BELT	1-27	12.0	15.0	200	3	60	RM 1251
[EF-1]	600	0.25	IN-LINE CENTRIFUGAL	BI	BELT	1-9	0.07	1/4	115	1	60	RM 1246
[EF-2]	550	0.25	IN-LINE CENTRIFUGAL	BI	DIRECT	1-9	0.06	1/10	115	1	60	RM 1078
[EF-3]	550	0.25	IN-LINE CENTRIFUGAL	BI	DIRECT	1-9	0.06	1/10	115	1	60	RM 1247
[EF-4]	550	0.25	IN-LINE CENTRIFUGAL	BI	DIRECT	1-9	0.06	1/10	115	1	60	RM 1249
[EF-5]	450	0.25	IN-LINE CENTRIFUGAL	BI	BELT	1-8	0.12	1/4	115	1	60	RM 2232
[EF-6]*	110	0.125	CEILING EXHAUST	FC	DIRECT	N/A	N/A	80 WATTS	115	1	60	RM 1215
[EF-7]	500	0.125	IN-LINE CENTRIFUGAL	BI	DIRECT	1-9	0.06	1/10	115	1	60	RM 1088
[EF-8]	1800	0.125	IN-LINE CENTRIFUGAL	BI	DIRECT	1-13	0.52	3/4	115	1	60	RM 2237
[EF-9]	200	0.125	IN-LINE CENTRIFUGAL	BI	DIRECT	1-7	0.03	1/30	115	1	60	RM 1252
[EF-10]	300	0.25	CENTRIFUGAL ROOF	BI	DIRECT	1-8	0.05	1/20	115	1	60	RM 2205
[EF-11]	480	0.30	N/A	N/A	DIRECT	N/A	N/A	(2) 1/25	115	1	60	RM 1217

* CORROSION RESISTANT GALANIZED STEEL SCROLL AND HOUSING

DIAPHRAGM EXPANSION TANK

SYMBOL	MINIMUM VOLUME GALLONS	NOMINAL OPERATING PRESSURE PSIG	MINIMUM ACCEPTANCE VOLUME GALLONS	MINIMUM DESIGN PRESSURE PSIG	REMARKS
[ET-1]	33.6	18	11.3	125	
[ET-2]	10.0	18	10.0	125	
[ET-3]	21.7	18	11.3	125	
[ET-4]	7.8	18	2.5	125	
[ET-5]	106	18	53.0	125	
[ET-6]	7.8	18	2.5	125	

AIR SEPARATION TANK

SYMBOL	GPM	MAX. WATER PRESS. DROP FT WC	REMARKS
[AST-1]	54.0	3	ASME 125 PSI RATED. PROVIDE W/STRAINER & AUTOMATIC AIR VENT. NOTE: [AST-#] CORRESPONDS WITH [ET-#] SYSTEM
[AST-2]	282.8	3	
[AST-3]	38.0	3	
[AST-4]	196.0	3	
[AST-5]	92.0	3	
[AST-6]	278.0	3	

LIQUID-CHILLING PACKAGE, AIR COOLED

SYMBOL	TYPE	MINIMUM CAPACITY MBTUH	EVAPORATOR (COOLER) GPM	ETHYLENE GLYCOL %	TEMP IN°F	TEMP OUT°F	MAX LIQUID PRESS DROP FT WC	FOULING FACTOR	CONDENSER ENTERING AIR TEMP °F DB	EFFICIENCY	ELECTRICAL VOLTAGE	PHASE	HERTZ	MIN CIRCUIT AMPACITY	MAX OPERATING WT LBS	REMARKS
[CH-1]	SEE SPEC	1648.8	282.8	15	54.0	42.0	4.7	0.0001	115	7.3 EER	200	3	60	798.0	N/A	
[CH-2]	SEE SPEC	1188.0	196.0	15	54.5	42.0	12.7	0.0001	115	7.0 EER	200	3	60	576.0	N/A	
[CH-3]	SEE SPEC	1648.8	278.0	15	54.2	42.0	4.5	0.0001	115	7.3 EER	200	3	60	798.0	N/A	

CONDENSING UNIT, AIR-COOLED

SYMBOL	UNIT SERVED	MINIMUM CAPACITY BTUH	ENTERING DRY BULB AIR TEMP F	EER (MIN) AT ARI CONDITIONS	ELECTRICAL NOT TO EXCEED CIRCUIT AMPACITY	VOLTAGE	PHASE	HERTZ	REMARKS
CU-1	FC-1	8,480	74	9.7	12.1	115	1	60	CONTROLS ALLOWS FOR OPERATION @ 30 DEGREE F AMBIENT.
CU-2	FC-2	23,000	74	10.8	16.8	200	1	60	

PUMP

SYMBOL	SERVICE	MINIMUM CAPACITY GPM	TOTAL DYNAMIC HEAD FT WC	TYPE	MAXIMUM RPM	PUMP MINIMUM EFFICIENCY %	MOTOR MINIMUM HP	VOLTAGE	PHASE	HERTZ	REMARKS
[CP-1A]	CHILLED WATER	282.8	37.0	BASE-MOUNTED END SUCTION	1750	78	5.0	200	3	60	
[CP-1B]	HOT WATER	54.0	84.0	IN-LINE CLOSED-COUPLE	3450	47	5.0	200	3	60	
[CP-1C]	HOT WATER	10.0	10	IN-LINE CLOSED-COUPLE	1750	N/A	1/4	115	1	60	BOILER RECIRC
[CP-2A]	CHILLED WATER	196.0	50.0	BASE-MOUNTED END SUCTION	1750	62	5.0	200	3	60	
[CP-2B]	HOT WATER	38.0	63.0	IN-LINE CLOSED-COUPLE	3450	44	2.0	200	3	60	
[CP-2C]	HOT WATER	10.0	10	IN-LINE CLOSED-COUPLE	1750	N/A	1/4	115	1	60	BOILER RECIRC
[CP-3A]	CHILLED WATER	278.0	33.0	BASE-MOUNTED END SUCTION	1750	77	5.0	200	3	60	
[CP-3B]	HOT WATER	92.0	65.0	IN-LINE CLOSED-COUPLE	3450	59	5.0	200	3	60	
[CP-3C]	HOT WATER	10.0	10	IN-LINE CLOSED-COUPLE	1750	N/A	1/4	115	1	60	BOILER RECIRC

REGISTER

SYMBOL	NECK SIZE, INCHES	APPLICATION	REMARKS
[R-1]	18x18	SUPPLY	PROVIDE SUPPLY REGISTERS W/OPPOSED BLADE DAMPERS W/DBL. DEFLECTION BLADES-VERT. FRONT, HORIZ. REAR. INDIVIDUALLY ADJUSTABLE BLADES FRONT & REAR. EXCEPTIONS TO THE ABOVE REQUIREMENTS WILL BE ACCEPTED TO COMPLY WITH NOTE 7 ON SHEET M-601
[R-2]	36x12	SUPPLY	
[ER-1]	8x8	EXHAUST	PROVIDE EXHAUST REGISTERS W/OPPOSED BLADE DAMPERS W/DBL. DEFLECTION BLADES-VERT. FRONT, HORIZ. REAR. INDIVIDUALLY ADJUSTABLE BLADES FRONT & REAR. EXCEPTIONS TO THE ABOVE REQUIREMENTS WILL BE ACCEPTED TO COMPLY WITH NOTE 7 ON SHEET M-601
[ER-2]	10x10	EXHAUST	
[ER-3]	12x12	EXHAUST	
[ER-4]	14x14	EXHAUST	
[R-7]	8x8	EXHAUST	
[R-8]	8x8	EXHAUST	

COOLING COIL, CHILLED WATER

SYMBOL	CFM	MIN CAPACITY TOTAL MBTUH	MIN CAPACITY SENSIBLE MBTUH	ENTERING AIR TEMP °F DRY BULB	ENTERING AIR TEMP °F WET BULB	LEAVING AIR TEMP °F DRY BULB	GPM	ENTERING WATER TEMP °F	ETHYLENE GLYCOL %	MAX AIR PRESS DROP IN WC	MAX WATER PRESS DROP FT WC	MAX FACE VELOCITY FPM	MIN NO OF ROWS	CONTROL VALVE SYMBOL	REMARKS
[CC-1]	33700	1610.0	1609.0	95.1	63.4	48.4	282.8	42	15	0.94	10.0	600	6	[CV-1]	[AHU-1]
[CC-2]	23100	1116.0	1116.0	95.1	63.4	47.9	196.0	42	15	0.56	8.5	470	8	[CV-2]	[AHU-2]
[CC-3]	14000	576.0	575.0	93.4	62.8	53.2	101.2	42	15	0.64	7.0	600	6	[CV-3]	[AHU-3]
[CC-4]	7800	492.0	491.0	115.0	68.0	53.2	86.4	42	15	0.49	3.3	500	6	[CV-4A]	[AHU-4]
[CC-5]	14550	515.0	514.0	88.2	61.0	53.6	90.5	42	15	0.84	3.6	600	8	[CV-5]	[AHU-5]

NOTE: LEAVING DRY BULB TEMPERATURE ARE LISTED FOR INFORMATION ONLY.

GENERAL NOTE:

EQUIPMENT SHALL MEET THE PERFORMANCE REQUIREMENTS LISTED IN THE EQUIPMENT SCHEDULE AT A SITE ELEVATION OF 1868 FEET ABOVE SEA LEVEL.

US Army Corps of Engineers
Sacramento District

Designed by: A.M. | Dwn by: A.M. | Spec No.: 1304 | Reviewed by: S.B. | Submitted by: /s/ Section Chief, Chief, Mech/Elec Des. Sec.
Date: 10/21/05 | Design file no: 229-25-539 | Drawing Code: | File name: | Plot date: | Dwg scale: AS_NOTED | Rev.

DEPARTMENT OF THE ARMY
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SACRAMENTO, CALIFORNIA

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NELLIS AFB NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL SCHEDULES

SIDE WALL LINER SLOT DIFFUSER

SYMBOL	LENGTH FT	MIN. NO OF SLOTS	CFM	NOMINAL SLOT WIDTH INCHES	INLET INCHES	THROW (FEET)		REMARKS
						COOLING	HEATING	
[LS-1]	4	1	SEE DRAWINGS	3	10	20' @ 25 NC @ 425f	13	THROW DATA BASE ON ISOTHERMAL AIR AT 100 FPM TERMINAL VELOCITY

EXHAUST RELIEF PENTHOUSES

SYMBOL	CFM	MAX AIR PRESSURE DROP IN WC	NOMINAL THROAT SIZE LENGTH BY WIDTH INCHES	TYPE	NOTES
[RP-1]	33,700	0.11	48 X 144	LOUVERED PENTHOUSE	PROVIDE BIRD SCREEN

OUTSIDE AIR INTAKE PENTHOUSES

SYMBOL	CFM	MAX AIR PRESSURE DROP IN WC	NOMINAL THROAT SIZE LENGTH BY WIDTH INCHES	TYPE	NOTES
[IP-1]	23,000	0.11	36 X 102	LOUVERED PENTHOUSE	PROVIDE BIRD SCREEN
[IP-2]	7,800	0.08	28 X 86	LOUVERED PENTHOUSE	PROVIDE BIRD SCREEN
[IP-3]	14,550	0.11	36 X 66	LOUVERED PENTHOUSE	PROVIDE BIRD SCREEN
[IP-4]	14,000	0.11	36 X 66	LOUVERED PENTHOUSE	PROVIDE BIRD SCREEN

GRILLE

SYMBOL	NECK SIZE, INCHES	APPLICATION	REMARKS
[G-1]	16x16	RETURN	24 X 24 LAY-IN PANEL BOLDER 3/4" SPACING 0" DEFLECTION. EXCEPTIONS TO THE ABOVE REQUIREMENTS WILL BE ACCEPTED TO COMPY WITH NOTE 7 ON SHEET M-601
[G-2]	8x8	RETURN	
[G-3]	20x20	RETURN	

DIFFUSER

SYMBOL	NECK SIZE INCHES	LAY-IN PANEL BORDER	TYPE	NC RATING MAX	REMARKS
[SD-1]	6X6	24X24	SQUARE/ RECTANGULAR	30	1 2 3 4 5 7 8
[SD-2]	9X9				
[SD-3]	12X12				
[SD-4]	6X9				
[SD-5]	6X12				
[SD-6]	6X15				
[SD-7]	9X12				
[SD-8]	9X15				
[SD-9]	12X15				
[SD-10]	15X18				
[SD-11]	6X9				6
[SD-12]	9X12				6
[SD-13]	6X6	11X11	BEVELED DROP FACE		6

1. SEE PLANS FOR CFM
2. PROVIDE EQUALIZING GRID
3. PROVIDE OPPOSED BLADE DAMPER
4. PROVIDE SHEET METAL ADAPTER TO TRANSITION TO ROUND DUCT
5. CORE OF DIFFUSER SHALL BE REMOVEABLE FROM FROM THE FACE OF THE DIFFUSER.
6. PROVIDE WITHOUT OPPOSED BLADE DAMPER
7. WHERE AN AIR TERMINAL UNIT SUPPLIES AIR TO A SINGLE DIFFUSER PROVIDE DIFFUSER WITH OUT AN OPPOSED BLADE DAMPER
8. EXCEPTIONS TO THE ABOVE REQUIREMENTS WILL BE ACCEPTED TO COMPY WITH NOTE 7 ON SHEET M-601

AIR CONDITIONER FOR ELECTRONIC DATA PROCESSING & TAPE STORAGE SPACES

SYMBOL	AIR FLOW DIRECTION	SUPPLY FAN			EVAPORATOR					REHEAT COIL, ELECTRIC	HUMIDIFIER, ELECTRIC		RELATIVE HUMIDITY SETPOINT AND SENSITIVITY %	ELECTRICAL CHARACTERISTICS			MIN. CIRCUIT AMPACITY (MCA)	FILTERS	REMARKS
		MINIMUM AIR FLOW CFM	EXTERNAL STATIC PRESS IN WC	MIN MOTOR HP	MINIMUM CAPACITY TOTAL MBTUH	MINIMUM CAPACITY SENSIBLE MBTUH	ENTERING AIR TEMP °F		MAX LEAVING AIR TEMP °F	MIN CAPACITY MBTUH (INCLUDES MOTOR HEAT)	MIN CAPACITY LB VAPOR PER HOUR	TEMP SETPOINT AND SENSITIVITY °F		VOLTAGE	PHASE	HERTZ			
							DRY BULB	WET BULB	DRY BULB										
[CRAC-1]	HORIZ	1260	0.3	3/4	32.5	27.1	74.0	61.7	——	17.05	4.5	74.0+2.0	50.0+3.0	208	3	60	23.1	SEE SPECS	REHEAT TO HAVE 1 STAGES UNIT TO BE MOUNTED ABOVE SUSPENDED CEILING

AIR COOLED CONDENSER

SYMBOL	UNIT SERVED	MINIMUM CAPACITY MBTUH	ENTERING DRY BULB AIR TEMP F	ELECTRICAL				REMARKS
				MIN. CIRCUIT AMPACITY (MCA) AMPS	VOLTAGE	PHASE	HERTZ	
[ACC-1]	[CRAC-1]	32.5	115	23.3	208	1	60	PROVIDE: 1) VARIABLE SPEED FAN CONTROL

GENERAL NOTE:

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M-604

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HEATING COIL, HOT WATER

SYMBOL	CFM	MINIMUM CAPACITY MBTUH	GPM	ENTERING WATER TEMP °F	ENTERING AIR TEMP °F	LEAVING AIR TEMP °F	MAXIMUM AIR PRESSURE DROP IN WC	MAXIMUM WATER PRESSURE DROP FT WC	MAXIMUM FACE VELOCITY FPM	GLYCOL %	TYPE	CONTROL VALVE SYMBOL	AIR-HANDLER SERVED	REMARKS
[HC-4]	7800	500.0	50.0	180	27.0	90.0	0.16	2.1	550	0	2-WAY	XXX	[AHU-4]	

AIR TERMINAL UNIT, SINGLE DUCT COOLING, VARIABLE VOLUME W/REHEAT COIL

SYMBOL	CFM RANGE		HEATING COIL, HOT WATER								MAX INTERNAL RESISTANCE IN WC	REMARKS
	COOLING	HEATING	CFM	MINIMUM CAPACITY BTUH	GPM	ENTERING WATER TEMP °F	ENTERING AIR TEMP °F	MAX WATER PRESS DROP FT WC	GLYCOL % BY WEIGHT	VALVE PRESS DROP & NO OF WAYS		
ATU 1040	650	325	325	13,110	0.9	180	53.0	5.0	0	5PSIG-2	0.6	MAX INTERNAL RESISTANCE INCLUDES HEATING COIL PRESSURE DROP. FOR ATU'S WITH MORE THAN ONE DIFFUSER, PROVIDE A VOLUME DAMPER AT THE ATU FOR EACH RUN OUT.
ATU 1041	780	390	390	14,510	1.0					5PSIG-2		
ATU 1042	2150	1075	1075	42,340	2.8					5PSIG-2		
ATU 1044	230	115	115	6750	0.7					5PSIG-2		
ATU 1045	200	100	100	6250	0.6					5PSIG-2		
ATU 1046	340	170	170	7570	0.5					5PSIG-2		
ATU 1047	350	175	175	7690	0.5					5PSIG-2		
ATU 1048	420	210	210	8500	0.6					5PSIG-2		
ATU 1050	1140	570	570	22,360	1.5					5PSIG-2		
ATU 1051	450	225	225	8830	0.6					5PSIG-2		
ATU 1052	450	225	225	8830	0.6					5PSIG-2		
ATU 1053	540	270	270	11,840	0.8					5PSIG-2		
ATU 1054A	600	300	300	7900	0.8					5PSIG-2		
ATU 1054B	1400	700	700	25,120	1.7					5PSIG-2		
ATU 1056	300	150	150	7800	0.8					5PSIG-2		
ATU 1057	300	150	150	7800	0.8					5PSIG-2		
ATU 1058	1000	500	500	20,790	1.4					5PSIG-2		
ATU 1059	1300	650	650	24,080	1.6					5PSIG-2		
ATU 1061	1100	550	550	21,920	1.5					5PSIG-2		
ATU 1062	200	100	100	6250	0.6					5PSIG-2		
ATU 1063	300	150	150	7800	0.8					5PSIG-2		
ATU 1069	500	250	250	9360	0.6					5PSIG-2		
ATU 1070	550	275	275	11,970	0.8					5PSIG-2		
ATU 1071A	500	250	250	14,190	1.0					5PSIG-2		
ATU 1071B	750	375	375	9360	0.6					5PSIG-2		
ATU 1072	240	120	120	6780	0.7					5PSIG-2		
ATU 1073	240	120	120	6910	0.7					5PSIG-2		
ATU 1074	380	190	190	8040	0.5					5PSIG-2		
ATU 1075	945	470	470	20,090	1.3					5PSIG-2		
ATU 1076	1800	900	900	30,320	2.0					5PSIG-2		
ATU 1080	500	250	250	9360	0.6					5PSIG-2		
ATU 1083	1000	500	500	20,790	1.4					5PSIG-2		
ATU 1084	600	300	300	12,550	0.8					5PSIG-2		
ATU 1086	300	150	150	7,800	0.8					5PSIG-2		
ATU 1087	250	125	125	7,060	0.7					5PSIG-2		
ATU 1089	800	400	400	14,710	1.0					5PSIG-2		
ATU 1090	440	220	220	8720	0.6					5PSIG-2		
ATU 1091	370	185	185	7930	0.5					5PSIG-2		
ATU 1092	550	275	275	11,970	0.8					5PSIG-2		
ATU 1094A	2000	1000	1000	32,150	2.2					5PSIG-2		
ATU 1094B	350	175	175	7690	0.5					5PSIG-2		

GENERAL NOTE:

EQUIPMENT SHALL MEET THE PEFORMANCE REQUIREMENTS LISTED IN THE EQUIPMENT SCHEDULE AT A SITE ELEVATION OF 1868 FEET ABOVE SEA LEVEL.

US Army Corps of Engineers Sacramento District

Symbol | Description | Date | Approved

Designed by: A.M. | Dwn by: A.M. | Spec No.: 1304 | Reviewed by: S.B. | Submitted by: Chief, Mech/Elec Des. Sec.

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MECHANICAL SCHEDULES

Sheet reference number:
M-605

AIR TERMINAL UNIT, SINGLE DUCT COOLING, VARIABLE VOLUME W/REHEAT COIL

SYMBOL	CFM RANGE		HEATING COIL, HOT WATER								MAX INTERNAL RESISTANCE IN WC	REMARKS
	COOLING	HEATING	CFM	MINIMUM CAPACITY BTUH	GPM	ENTERING WATER TEMP °F	ENTERING AIR TEMP °F	MAX WATER PRESS DROP FT WC	GLYCOL % BY WEIGHT	VALVE PRESS DROP & NO OF WAYS		
ATU 1002A	500	250	250	9360	0.6	180	53.0	5.0	0	5PSIG–2	0.6	MAX INTERNAL RESISTANCE INCLUDES HEATING COIL PRESSURE DROP. FOR ATU'S WITH MORE THAN ONE DIFFUSER, PROVIDE A VOLUME DAMPER AT THE ATU FOR EACH RUN OUT.
ATU 1002B	1500	750	750	27,440	1.8					5PSIG–2		
ATU 1016	300	150	150	7800	0.8					5PSIG–2		
ATU 1017	300	150	150	7800	0.8					5PSIG–2		
ATU 1018	375	190	190	8040	0.5					5PSIG–2		
ATU 1019	375	190	190	8040	0.5					5PSIG–2		
ATU 1020	200	100	100	6250	0.6					5PSIG–2		
ATU 1021	500	250	250	9360	0.6					5PSIG–2		
ATU 1022	1200	600	600	23,020	1.5					5PSIG–2		
ATU 1025	300	150	150	7800	0.8					5PSIG–2		
ATU 1026	300	150	150	7800	0.8					5PSIG–2		
ATU 1027	300	150	150	7800	0.8					5PSIG–2		
ATU 1028	300	150	150	6750	0.7					5PSIG–2		
ATU 1029	840	420	420	15,120	1.0					5PSIG–2		
ATU 1030	1170	580	580	22,580	1.5					5PSIG–2		
ATU 1031	800	400	400	14,710	1.0					5PSIG–2		
ATU 1032	1800	900	900	30,320	2.0					5PSIG–2		
ATU 1033	1600	800	800	28,420	1.9					5PSIG–2		
ATU 1034	300	150	150	7800	0.8					5PSIG–2		
ATU 1035	300	150	150	7800	0.8					5PSIG–2		
ATU 1037A	720	360	360	13,870	0.9					5PSIG–2		
ATU 1037B	960	480	480	20,320	1.4					5PSIG–2		
ATU 1038	340	170	170	7570	0.5					5PSIG–2		
ATU 1039	270	135	135	7360	0.7					5PSIG–2		
ATU 1095	370	185	185	7930	0.5					5PSIG–2		
ATU 1096	370	185	185	7930	0.5					5PSIG–2		
ATU 1099	400	200	200	8270	0.6					5PSIG–2		
ATU 1100	400	200	200	8270	0.6					5PSIG–2		
ATU 1101	400	200	200	8270	0.6					5PSIG–2		
ATU 1102	400	200	200	8270	0.6					5PSIG–2		
ATU 1103	400	200	200	8270	0.6					5PSIG–2		
ATU 1104	400	200	200	8270	0.6					5PSIG–2		
ATU 1105	1100	550	550	21,920	1.5					5PSIG–2		
ATU 1106A	750	375	375	14,190	1.0					5PSIG–2		
ATU 1106B	750	375	375	14,190	1.0					5PSIG–2		
ATU 1107	600	300	300	12,550	0.8					5PSIG–2		
ATU 1140A	800	400	400	14,710	1.0					5PSIG–2		
ATU 1140B	400	200	200	8,270	0.6					5PSIG–2		

GENERAL NOTE:

EQUIPMENT SHALL MEET THE PEFORMANCE REQUIREMENTS LISTED IN THE EQUIPMENT SCHEDULE AT A SITE ELEVATION OF 1868 FEET ABOVE SEA LEVEL.

US Army Corps of Engineers
Sacramento District

Symbol | Description | Date | Approved

Designed by: A.M.
Dwn by: A.M.
Spec No.: 1304
Reviewed by: S.B.
Submitted by: Chief, Mech/Elec Des. Sec.
Date: 10/21/05
Design file no: 229-25-539
Drawing Code:
File name:
Plot date:
Dwg scale: AS_NOTED
Rev.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
1325 'J' STREET
SACRAMENTO, CA 95814-2922

NELLIS AFB NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL SCHEDULES

Sheet reference number:
M-606

AIR TERMINAL UNIT, SINGLE DUCT COOLING, VARIABLE VOLUME W/REHEAT COIL

SYMBOL	CFM RANGE		HEATING COIL, HOT WATER								MAX INTERNAL RESISTANCE IN WC	REMARKS
	COOLING	HEATING	CFM	MINIMUM CAPACITY BTUH	GPM	ENTERING WATER TEMP °F	ENTERING AIR TEMP °F	MAX WATER PRESS DROP FT WC	GLYCOL % BY WEIGHT	VALVE PRESS DROP & NO OF WAYS		
ATU 1202A	825	410	410	18,880	1.0	180	53.0	5.0	0	5PSIG-2	0.6	MAX INTERNAL RESISTANCE INCLUDES HEATING COIL PRESSURE DROP. FOR ATU'S WITH MORE THAN ONE DIFFUSER, PROVIDE A VOLUME DAMPER AT THE ATU FOR EACH RUN OUT.
ATU 1202B	825	410	410	18,880	1.0					5PSIG-2		
ATU 1203	710	355	355	13,770	0.9					5PSIG-2		
ATU 1204	1150	575	575	22,470	1.5					5PSIG-2		
ATU 1208	200	100	~~~ NON SHUT-OFF BOX ~~~									
ATU 1211	600	300	300	12,550	0.8	180	53.0	5.0	0	5PSIG-2	0.6	
ATU 1212A	600	300	300	12,550	0.8					5PSIG-2		
ATU 1212B	600	300	300	12,550	0.8					5PSIG-2		
ATU 1212C	200	100	100	6250	0.6					5PSIG-2		
ATU 1213	550	275	275	11,970	0.8					5PSIG-3		
ATU 1217	400	200	200	8270	0.6					5PSIG-2		
ATU 1218	450	225	225	8830	0.6					5PSIG-2		
ATU 1219	300	150	150	7800	0.8					5PSIG-2		
ATU 1220	450	225	225	8830	0.6					5PSIG-2		
ATU 1221	320	160	160	8080	0.8					5PSIG-2		
ATU 1222	200	100	100	6250	0.6					5PSIG-2		
ATU 1223A	550	275	275	11,970	0.8					5PSIG-2		
ATU 1223B	550	275	275	11,970	0.8					5PSIG-2		
ATU 1224	300	150	150	7800	0.8					5PSIG-2		
ATU 1226	300	150	150	7800	0.8					5PSIG-2		
ATU 1227	300	150	150	7800	0.8					5PSIG-2		
ATU 1229	400	200	200	8270	0.6					5PSIG-2		
ATU 1230A	700	350	350	13,660	0.9					5PSIG-2		
ATU 1230B	700	350	350	13,660	0.9					5PSIG-2		
ATU 1232	550	275	275	11,970	0.8					5PSIG-2		
ATU 1233	300	150	150	7800	0.8					5PSIG-2		
ATU 1234	300	150	150	7800	0.8					5PSIG-3		
ATU 1235	650	325	325	13,110	0.9					5PSIG-2		
ATU 1237	450	225	225	8830	0.6					5PSIG-2		
ATU 1238	200	100	100	6250	0.6					5PSIG-2		

GENERAL NOTE:

EQUIPMENT SHALL MEET THE PEFORMANCE REQUIREMENTS LISTED IN THE EQUIPMENT SCHEDULE AT A SITE ELEVATION OF 1868 FEET ABOVE SEA LEVEL.

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved

Designed by: A.M. | Dwn by: A.M. | Spec No.: 1304 | Reviewed by: S.B. | Submitted by: Chief, Mech/Elec Des. Sec.
Date: 10/21/05 | Rev. | Design file no: 229-25-539 | Drawing Code: | File name: | Plot date: | Dwg scale: AS_NOTED

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN-HOUSE DESIGN
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SACRAMENTO, CA 95814-2922

NELLIS AFB NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL SCHEDULES

Sheet reference number:
M-607

AIR TERMINAL UNIT, SINGLE DUCT COOLING, VARIABLE VOLUME W/REHEAT COIL

SYMBOL	CFM RANGE		HEATING COIL, HOT WATER								MAX INTERNAL RESISTANCE IN WC	REMARKS
	COOLING	HEATING	CFM	MINIMUM CAPACITY BTUH	GPM	ENTERING WATER TEMP °F	ENTERING AIR TEMP °F	MAX WATER PRESS DROP FT WC	GLYCOL % BY WEIGHT	VALVE PRESS DROP & NO OF WAYS		
ATU 2202	940	470	470	20,090	1.3	180	53.0	5.0	0	5PSIG–2	0.6	MAX INTERNAL RESISTANCE INCLUDES HEATING COIL PRESSURE DROP. FOR ATU'S WITH MORE THAN ONE DIFFUSER, PROVIDE A VOLUME DAMPER AT THE ATU FOR EACH RUN OUT.
ATU 2209	900	450	450	15,720	1.1					5PSIG–2		
ATU 2210	450	225	225	8830	0.6					5PSIG–2		
ATU 2211	550	275	275	11,970	0.8					5PSIG–2		
ATU 2214	500	250	250	9360	0.6					5PSIG–2		
ATU 2215	1250	625	625	23,550	1.6					5PSIG–2		
ATU 2216	250	125	125	7060	0.7					5PSIG–2		
ATU 2218	400	200	200	8590	0.6					5PSIG–2		
ATU 2219	300	150	150	8100	0.8					5PSIG–2		
ATU 2222	750	375	375	14,190	1.0					5PSIG–2		
ATU 2223	400	200	200	8270	0.6					5PSIG–2		
ATU 2224	800	400	400	14,710	1.0					5PSIG–2		
ATU 2225	400	200	N/A	→							NON SHUT–OFF BOX	
ATU 2227	600	300	300	12,550	0.8					5PSIG–2	0.6	
ATU 2229	550	275	275	11,970	0.8					5PSIG–2		
ATU 2236	400	200	200	8270	0.6					5PSIG–2		
ATU 2238	700	350	350	13,660	0.9					5PSIG–2		
ATU 2240A	750	375	375	14,190	1.0					5PSIG–2		
ATU 2240B	750	375	375	14,190	1.0					5PSIG–2		
ATU 2241	300	150	150	7800	0.8					5PSIG–2		
ATU 2242A	750	375	375	14,190	1.0					5PSIG–2		
ATU 2242B	750	375	375	14,190	1.0					5PSIG–2		
ATU 2244	250	125	125	7060	0.7					5PSIG–2		
ATU 2245	250	125	125	7060	0.7	↓	↓	↓	↓	5PSIG–2	↓	

GENERAL NOTE:

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US Army Corps of Engineers
Sacramento District

Approved | Date: | Description | Symbol

Rev:
Date: 10/21/05
Design file no: 229–25–539
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Dwg scale: AS_NOTED

Designed by: A.M.
Dwn by: A.M.
Spec No.: 1304
Reviewed by: S.B.
Submitted by:
Chief, Mech/Elec Des. Sec.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

SACRAMENTO DISTRICT
IN–HOUSE DESIGN
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SACRAMENTO, CA 95814–2922

NEVADA

NELLIS AFB

F/A–22 ADD/ALTER WEAPONS SCHOOL

MECHANICAL SCHEDULES

Sheet reference number:
M–608

Border Revised 08/30/04, CDCSHT02.DWG

AIR TERMINAL UNIT, SINGLE DUCT COOLING, VARIABLE VOLUME W/REHEAT COIL

SYMBOL	CFM RANGE		HEATING COIL, HOT WATER								MAX INTERNAL RESISTANCE IN WC	REMARKS
	COOLING	HEATING	CFM	MINIMUM CAPACITY BTUH	GPM	ENTERING WATER TEMP °F	ENTERING AIR TEMP °F	MAX WATER PRESS DROP FT WC	GLYCOL % BY WEIGHT	VALVE PRESS DROP & NO OF WAYS		
ATU 1115	400	200	200	8270	0.6	180	53.0	5.0	0	5PSIG−2	0.6	MAX INTERNAL RESISTANCE INCLUDES HEATING COIL PRESSURE DROP. FOR ATU'S WITH MORE THAN ONE DIFFUSER, PROVIDE A VOLUME DAMPER AT THE ATU FOR EACH RUN OUT.
ATU 1116A	400	200	200	8270	0.6					5PSIG−2		
ATU 1116B	600	300	300	12,550	0.8					5PSIG−2		
ATU 1117	170	85	85	5710	0.6					5PSIG−2		
ATU 1119	140	70	70	5130	0.5					5PSIG−2		
ATU 1121	840	420	420	15,120	1.0					5PSIG−2		
ATU 1122	200	100	100	6250	0.6					5PSIG−2		
ATU 1123	200	100	100	6250	0.6					5PSIG−2		
ATU 1124	200	100	100	6250	0.6					5PSIG−2		
ATU 1125	1430	715	715	26,730	1.8					5PSIG−2		
ATU 1126	500	250	250	9360	0.6					5PSIG−2		
ATU 1128	280	140	140	7510	0.8					5PSIG−2		
ATU 1129	350	175	175	7690	0.5					5PSIG−2		
ATU 1130	470	235	235	9040	0.6					5PSIG−2		
ATU 1131	350	175	175	7690	0.5					5PSIG−2		
ATU 1132	390	195	195	8160	0.5					5PSIG−2		
ATU 1133	300	150	150	7800	0.8					5PSIG−2		
ATU 1134	450	225	225	8830	0.6					5PSIG−2		
ATU 1135	290	145	145	7660	0.8					5PSIG−2		
ATU 1136	1050	525	525	21,360	1.4					5PSIG−2		
ATU 1139	1380	675	675	24,610	1.6					5PSIG−2		
ATU 1141	1100	550	550	21,920	1.5					5PSIG−2		

C

B

A

GENERAL NOTE:

EQUIPMENT SHALL MEET THE PEFORMANCE REQUIREMENTS LISTED IN THE EQUIPMENT SCHEDULE AT A SITE ELEVATION OF 1868 FEET ABOVE SEA LEVEL.

US Army Corps of Engineers
Sacramento District

Symbol | Description | Date | Approved

Designed by: A.M. | Date: 10/21/05 | Rev.
Dwn by: A.M. | Spec No.: 1304 | Design file no: 229-25-539
Reviewed by: S.B. | Drawing Code:
Submitted by: | File name: | Plot date: | Dwg scale: AS_NOTED
Chief, Mech/Elec Des. Sec.

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NELLIS AFB — NEVADA
F/A-22 ADD/ALTER WEAPONS SCHOOL
MECHANICAL SCHEDULES

Sheet reference number:
M-609